CITY GOVERNMENT.

(Entered as Second-Class Matter at the New York, N. Y., Post Office, August 12, 1896.)

VOL. I. NO. 5. NEW YORK AND CHICAGO, DECEMBER, 1896. $3 A YEAR.

COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

GEO. TRUESDELL. JOHN W. ROSS. CHARLES F. POWELL.

City Government is a handsome production always, but especially so this month. It puts on a beautiful new cover, the most striking feature of which is an original figure to typify City Government, and on its first page it presents the portraits of three handsome gentlemen who are typical of the progressive American city official. These gentlemen are the commissioners of the District of Columbia, and they administer the public affairs of the City of Washington in a way which makes our beautiful capital city one of the best governed municipalities on this continent.

THE CITY AND CIVILIZATION.

BY EX-GOV. ALVA ADAMS, OF PUEBLO, COLORADO.

Bryce in his "American Commonwealth" wrote that the government of great cities was the conspicuous failure of the American republic. If this statement remains true for an extended period, future historians may write that the government of the American republic itself is a conspicuous failure. The destiny of our country will be so closely woven with the civilization of our cities that the one cannot be a failure and the other a success.

The city is the apostle and the prophet of modern civilization. It is the audacity, the wealth and the genius of the cities that dictate in the conventions of state and nation, and through them shape the legislation of the land. It is in the city that fashion sets up her shrines and pleasure builds her temples. Art, literature, learning have forsaken the glories of rural life and have found a new home in the shadow of great warehouses and amid palaces more gorgeous than the dreams of the Orient. Most of the achievements that fire the ambition of the country boy are hidden beneath the glamour, the romance and mist of city life.

The countryman does not impress his character upon the city when he goes there, but he is influenced by the city. Chameleon-like he takes on its color, its ways and habits. The city is little affected by the rural life that surrounds it and from which in a great measure it draws its support. Instead it is continually sending out currents of influence that affect the moral, social and political life to the very boundaries of the territory with which it has social and commercial alliance.

This being true and it also being true that the tendency of the population is to an alarming degree cityward, it follows that it is the city that will stamp its influence and character upon the dawning age, in whose theatres our own children will be actors. Thus the question of city government reaches beyond today and becomes a potent factor in the civilization we are to bequeath to the next generation. It is not alone the prosperity and morals of our time that are involved; the future, however, need not concern us; posterity is provided for when we do what we ought for the present.

If my premises are correct, a pure and competent government of municipalities becomes the most sacred duty of American citizenship. Political action in village and country precincts is practically pure — an ideal democracy. In every rural precinct there are citizens who know the name and political faith of every voter. Upon a notched stick he can keep a record of the votes cast that will vary little from the official returns. Bribery and corruption have here no vantage ground. It is the crowding population and princely plunder of cities that offer a field and a temptation to the political pirate and boodler. If disaster is to fall upon our government, the cities will be the storm centres from whence will come the withering lightning and the shattering thunderbolt.

Reform the cities, keep them free from incompetent and tainted rule and the good influence will pass through life. Cities are the home, and in every strata to the very top of the political breeding ground, of political intrigue, the hiding places for corruption. Drive these evil elements from this shelter and refuge and they cannot exist.

Bad government in a true republic can only thrive through a lack of patriotism and for want of a spirit of sacrifice on the part of the best citizens. To say that the present condition cannot be remedied is to impeach democracy and admit that government by the people is a failure. If the best people will become citizens and not partisans, if they will realize the sentiment of an Eastern taxpayers' league, that "municipal government is business, not politics," the foundation for good government is laid. Partisanship is the evil genius of local government; fraud has no stronger ally.

It is the creator of the "boss;" it is the guardian and defender of the political thug and ballot box stuffer. It is the only sentiment in man that is stronger than selfishness. It blinds men to right, fairness, to even their own interests. At its command men will blacken and defame the character of a neighbor. In its behalf currency is given to falsehood and misrepresentation. No home it will not invade, no heart it will not crush, no rascal it will not defend. Upon its banners, sentiments as exalted as truth; in practice, no tool in the arsenal of deception it will not use. In its interest we wink at fraudulent voting and the violation and miscarriage of laws enacted to promote the purity of the ballot.

Investigate the cities of the United States that are today groaning under the burden of misrule, and in nearly every case you will find that partisanship is the fortress that protects the spoilers, and that it is from this shelter that come the poison and missiles that cripple and destroy good city government. In a sermon I heard yesterday the preacher said that when the devil felt that he was losing his grip on a victim he instilled a spirit of theology and started him upon a crusade in defense of creed; as long as he stuck to the discussion of creed the devil felt pretty sure of his man. So with the boodlers, when the taxpayer manifests too much unrest and discontent he raises the cry of "party," and with that as a shibboleth he quiets the spirit of inquiry and under the banner of partisanship continues his reign of misgovernment. Washington, in his farewell address, said: "Let me now warn you in the most solemn manner against the baneful effects of the spirit of party."

Eliminate this element of partisanship from local affairs and select men who are clean, honest and competent without inquiry into their party faith and you will do much to solve the problem of city government. The ward boss, the heeler, the commercial patriot, the professional statesman, the man who makes politics a trade will protest. They may suffer, as they will be driven to honest toil; but from the vantage of cleaner methods and better rule the redeemed people can look upon their anguish and sweat with serenity, if not with satisfaction.

Good government costs something. It is the mandate of fate that things of value cannot be had without effort, without cost. For the evil in municipal affairs our best people are in a large measure to blame. They want clean, competent management, but they are not willing to make the necessary sacrifice to pay the price. That price is for the best and ablest to give the city the benefit of their

personal talents and capacity. It takes business sense, experience, ability to manage large affairs. If those who are competent will not be patriotic enough to give it their attention, incompetent men will. I believe that most of the waste and misrule of our cities is due to poor business ability, to incompetency, rather than dishonesty.

The majority of men are honest, but many are so incompetent that they cannot grasp and comprehend their duties; their incapacity makes them helpless victims and tools of the shrewd, scheming trickster. Often men of good instincts, and with no desire but to do right, but without business training or capacity, become members of city councils. Their less honest, but more expert, colleagues take advantage of their inexperience and get them, innocently, perhaps, committed to some questionable transaction. When once wrong, though ignorantly so, fear of exposure and scandal makes them continue as accomplices of the intentionally dishonest.

What can we expect? Through neglect, indifference or party fealty we put men in control whose range of experience, no matter how honest they may be, is too limited to make them competent to manage affairs so large, so varied, so complicated as a city. City government is the "humane management of a large estate;" money dividends are not the intent of city government. It is broader than this. It has to do with morals as well as finances, with education and culture, with health, comfort, protection, with every interest that touches or affects the social, the business or home life.

To promote all of these vital interests Pueblo is an estate valued at $10,000,000, yet to manage this vast property men are put in charge who in some cases have not been able to manage their own business involving a few hundred dollars; men who are often failures and bankrupts in small affairs are selected to manage the property of 30,0 people. No matter how well they may intend, their want of capacity or experience brings failure, waste and disappointment. They are not so much to blame as those who put them there. Place the best workman in any of our factories in charge of a large bank or wholesale house and the success of the experiment would be doubtful. Put the best mechanic or merchant in charge of the steel works or our public schools; would you be suprised if the works did not succeed or if our system of education was not satisfactory? No more can we expect our city to be a model when we place it in charge of inexperienced or incompetent men.

In the United States, government is the only business which the people seem to think requires no apprenticeship or business ability, and it is this theory that is responsible for much of the gigantic extravagance, loss and corruption in city governments.

In European cities they are more sensible than we are; they are better governed and at a less cost as a rule than American cities. Birmingham, the same size as Boston, costs about one-sixth as much; Berlin is governed by experts in every department. There are few cities in the world that receive as much for what they pay as Berlin. Comparing in population with New York, it costs about half as much. Citizens are not allowed to refuse office under penalty of disfranchisement and higher taxes. The position of alderman is recognized as a high honor in Europe, and in England and other countries ranks with a member of Parliament. So should it be with us. The city hall should be a seat of honor as respectable as the state house or the capitol at Washington. It is more difficult to conduct well the affairs of a city than it is to perform the duties of congressman or to manage a state administration. To do it well demands the highest standard of business and executive talent. The best men in Pueblo are not too good or too able to take charge of our city affairs. The position of alderman is one of responsibility and it should be one of honor.

In large corporations the stockholders select the very best men they have to serve as directors and managers. It is considered a business distinction to be elected director of a large bank or commercial enterprise; it is an acknowledgment of special capacity and worth. Why should not the same care and judgment be exercised in selecting trustees for a city? A city is practically a great corporation, and every citizen is a stockholder, and the welfare of the municipal corporation should be of as much importance as the good conduct of any business institution in which he may hold shares.

In an ideal city every citizen should be subjected to the call of the city, and those who refuse should be branded recreant and traitor as much as the man who sneaked into Canada in 1863 to avoid the draft. Plymouth colony, in the first code of laws on the New England coast, recognized want of patriotism as a crime and enacted that any man who refused to take office in the colony should be fined. Public opinion should enforce the code of the Pilgrim.

In our day the man who holds aloof from politics and will not take office, and seldom votes and never attends primaries, thinks himself a little better clay than the ordinary man and, strange to say, he is generally accepted by the community at his own estimate. He claims the right to kick at existing evils, but will not do his part to right them. Dr. Holmes said, "The world might be divided into two classes. First, those who go ahead and do something; second, those who sit still and find fault because it is not done some other way." The second seems to be the fashionable class with many of our self-styled best people.

President Jackson believed that all public business was a part of the business of each citizen. He lived up to that sentiment. If this generation would do the same, bad and corrupt government would cease. The pride that some Americans take in not mixing in politics is not only a false pride, a cheap vanity, but it is not patriotic. Voting is one of the penalties that democracy imposes upon its votaries. If we are of too fine a grain to stand the buffeting and democracy of poll and primary, if we do not like the equality of the caucus, we had better call for our passports as we are not made of the fibre this country needs.

Voting cannot be delegated. If we neglect that duty and let the vicious do the primary, caucus and conven-

tion work, they will make the laws and spend the money, and they would not be human if they did not make the one and spend the other for theri own benefit. If we permit wolves to act as shepherds, we have only ourselves to blame if we have no wool to sell or mutton to eat. The professional politician has no stronger ally, no better friend, than the man who stays at home and growls and insists in language as vigorous and picturesque as the vocabulary of our illustrious executive that the country is going to the "demnition bow-wows," and yet neglects his caucus and convention duties. He may vote election day, but the damage is often done before that time, and he then has but little choice and can scarcely more than record the verdict that has been determined by the gang or ring in the manipulation of the primary contests. We cannot undo the boodler by giving a part of one day in the year to local politics. He works 365 days and nearly as many nights. It is the old contest between the amateur and the professional, organized and experienced rascality and spasmodic and unorganized decency, between disciplined soldiers and the mob.

Every year we hear the rumble of the people's discontent, every year the conditions become more desperate, every year the peculators are more bold. They hear the lion growl, but they know that he is netted with the meshes of partisanship and they fear him not. There are more good men than bad, and if the good will assert themselves the fight is won. Law, decency, right, morals —everything is on the side of the good citizen. If with these auxiliaries he cannot win it shows bad generalship. Criticisms, resolutions, sermons, prayers never reformed a city unless backed by the voting and physical force of the citizens. Law-breaking resorts are abolished every Sunday from the pulpit; iniquity is denounced every night from the rostrum, but until some brave man swears out a warrant against the violator of the law the dens are open. They fear more a single determined man who insists upon the law than they do a conference of pulpit orators or any army of talking reformers. We can read essays week after week in our club on municipal reform, but if that is all we do it will make things no better at the city hall. It is carrying water in a sieve. It is more pleasant to do our reforming this way, but the real article takes work—fighting, sacrifice.

It is a very mild stamp of bravery that does its reforming through the medium of speech and essay, with the stump or pulpit for the theatre of action, but it takes nerve to fight a neighbor; it takes a brave man to defy his political machine; it takes a high degree of courage to go into the magistrate's office and swear out a warrant against an offender. Will the day come when the citizens of the gang-cursed cities of the United States will have the courage to do this, or will it continue to be said that "the nation who once grappled with the mightiest nation on earth because of the imposition of a paltry tax on tea, now, through its descendants, dare not declare itself free from the soiled hands of its own boodlers."

Plunder, like Satan, laughs at resolutions and oratory. but before organized and determined purpose it is in dismay. Nothing is more amazing than the rapidity with which corrupt officials will change from arrogant bosses to willing and submissive servants when once the people are awakened to an organized investigation and resistance. Single, a hundred men may go before a board of aldermen with a just demand and gain nothing, but let the hundred men organize and speak as a single voice and "they can get anything they want, from prayer-books to school-houses." It is within the power of tax-payers to put a stop to city and county extravagance. It is their duty to use that ability.

Our minister preached yesterday that tolerance was one of the greatest of Christian virtues. By that standard Pueblo is a very Christian community, or gossip-cursed one, for rumor has it that our tax-payers have been plundered and despoiled in many ways and yet all has been forgiven; at least no one has been punished. In English cities you never hear of the misappropriation of public funds. It is due, perhaps, to an Englishman's intolerance of little wrongs, to that disagreeable spirit of combativeness that will permit no invasion of his rights, however small. We preach that vigilance is the price of liberty; the Englishman lives up to the idea. With us it is a sentiment; with him a fact. If our people would in this emulate the English, the boodle phase would pass out of the problem of municipal government. We are too tolerant to public malfeasance. Almost are Americans like that age of which Cato or some other Roman wrote: "That he who stole from a private citizen was put in chains, while he who stole from the state was voted a triumph and robed in royal purple."

It is as great, if not a greater crime, to defraud a municipality which has by its vote testified its confidence than it is to despoil an individual, and the offence should be punished with the same promptness and certainty.

Today our community is rife with rumors of squandered and wasted funds, of collusion and fraud in the conduct of affairs. Some of these stories must be false; some may be true. How unjust to the innocent if they be false; how unjust to the people if any be true, and the guilty go unchallenged. The tax-payers should form a league. One committee created by that association should be a fearless, persistent committee of investigation. One duty should be to run to earth any charge affecting the probity of an official. If the charge be found true, let the culprit be punished; if it be false, let its falsity be published, as it is just as important to clear the innocent as it is to punish the guilty. A vigorous, able committee of this kind could clear our community of unfaithful officials and at the same time do justice to those that were true and also do much to muzzle the scandalmonger, who is not only pernicious, but contemptible.

We want no officials in either city, county or state who are paid representatives of great corporations. A lobby on the outside is hard to combat, but it is irresistible when it has a place at the council tables of our administration.

Trading is the curse of modern legislation. Laws are passed, not upon their merits, but by dicker. This is true in the legislatures of nation, state and city. State joins state in a mutual crusade on the national treasury. In

the state, section supports section under the reciprocal arrangement that each aids the other to plunder the state to the extent of an appropriation for each section. In the city aldermen trade votes with each other, and in that way obtain favors and improvements and appropriations for their wards which could not be obtained on their merits. Such men argue that there can be no dishonesty when no money passes. We want men proof against this kind of larceny, men who represent the entire county and city, and not a single district or ward. Clean, strong, patriotic men must be called into service and weak and incompetent men driven out.

Incompetency is as fatal as rascality, and it is more difficult to deal with; for its mistakes you have no resource, but for the rascal there is the law and the jail.

I have not touched upon changes in the law. While that may be necessary, just now it is a change in the administration of those we now have that is wanted; we must have not new laws, but new methods. The ideal reformer would change everything. He would, like Phaeton, change the course of the sun if he could reach it. Give us first the full benefit of existing laws. The appeals of tax clubs and reform leagues are always addressed to the large taxpayers. They of course have a deep interest in the good rule of the community, but the poor man has a still deeper concern. The rich can go to the mountains or the sea during the unpleasant seasons; the poor must live at home the entire year. The health, comfort, pleasure, every interest of his wife and children are affected by good or bad local rule.

National patriotism was never more universal, more potent in the United States than today. No breeze that blows over our broad land carries a single taint of treason or disloyalty. What we need is a revival of home and city loyalty. Like charity, that patriotism is best and truest that begins at our own fireside. Our people must be as willing to make a sacrifice for their city as for their country; a spirit of local patriotism must be invoked. If our cities be well governed, all will be well with the nation. Reform in a free government must come from the foundation—the people. You cannot reform from the top down. If you would straighten a leaning tower you send your architect to the foundation, not to the battlements—so with a republic.

The city is the centre from which our civilization radiates. The cities have in all times been the active moving agents of progress; they have made the history of the world; they have been the reservoirs of the world's thought, the citadels of learning; around their walls have waged the battles of freedom; they have been the cradles of liberty; in their defence the bravest of all ages have fallen. Well it was that when the disciples were sent out to carry the gospel to all the world that they were commanded to "begin at Jerusalem." It applies today as in the time of Mary's son, and I say to our friends that would we break the chains that our own indifference and neglect have forged, if we would free the age from a mighty peril, we must sound a trumpet blast that will waken the drowsy legions of good citizens. They must begin the battle for the Christian civilization of the age, they must begin at once—"beginning at Jerusalem."

SOME PHASES OF NEWARK'S GRAVITY SUPPLY AND STEEL CONDUITS.

BY M. R. SHERRERD, M. AM. SOC. C. E., SUPT. WATER DEPARTMENT OF NEWARK.

Newark's water supply is obtained by gravity from a drainage area of sixty-two and a half square miles, situated on the headwaters of the Pequannock River, a branch of the Passaic River. A general description of the plant was given by Mr. Bailey last year, and it is the purpose of this article only to deal with recent developments and incidents in connection with the supply.

The initial gravity plant was built in 1890–91 by the East Jersey Water Company under a contract to obtain certain definite results, among which was the supplying of the city of Newark with water up to a maximum quantity of 27,500,000 gallons daily until 1900, at which time the completed plant is to be turned over to the city, having a conduit and storage capacity of 50,000,000 gallons daily, in the meantime the company having the option to sell the amount of water in excess of the city of Newark's needs until 1900. The work done upon this plant in 1890, 1891 and 1892 consisted in the building of two storage reservoirs, an intake dam and thirty-one miles of forty-eight-inch steel conduit from the intake dam to the distributing reservoir, with a branch from the same of five miles of thirty-six-inch riveted steel pipe to the high-service reservoir.

One storage reservoir having a drainage area of nine and a half square miles and a capacity of 35,000,000 gallons, the other storage reservoir having a drainage area of twenty-seven square miles and a storage capacity of 2,500,000,000 gallons, and the intake dam with a drainage area especially appurtenant to it of twenty six square miles, making, with the drainage areas of the storage reservoirs, a total drainage area, as mentioned before, namely, sixty-two and a half square miles. The requirements of the contract as to the height of delivery, together with the selected location for the intake dam and the location of the conduit line, give a hydraulic grade of two feet in a thousand feet for the forty-eight-inch line.

Until the present year no tests of the carrying capacity of this conduit were made when working under contract requirements, but constant records were kept of the yield of the water-shed both by the company and the city. During the present year, however, tests of the pipe line have developed its capacity to be much less than the contract requirements, and the storage capacity in the water-shed has also been proven to be deficient. The company has undertaken to remedy both of these conditions, and an additional conduit has been laid and work is nearing completion upon the construction of dams which will give a greatly increased storage capacity.

The noticeable deficiency in the carrying capacity of this first line of the East Jersey Water Company, below what was at first maintained that it would carry, has given rise to numerous discussions of the "I told you so" variety. It seems quite apparent from developments that the company had known for a long time, if, indeed, it was not from the first expected, that the forty-eight-inch line would not carry to exceed 44,000,000 gal-

lons, and the startling feature has been the apparently rapid deterioration in carrying capacity in four years from this amount to 36,000,000 gallons, as developed the first of this year.

It is certainly true that little reliable information in regard to the carrying capacity of long lines of riveted steel pipe was available at the time the design for this work was made, and it is almost fair to say that this is the first line of the kind, and certainly the first equalling it in length, upon which continuous experiments and accurate measurements of the flow have been made. During February of the present year the actual amount of water carried by this forty-eight-inch line when running full to the first hydraulic summit was 36,000,000 gallons, which would correspond to a coefficient of roughness in Kutter's formula of the flow of water in pipes to .0143.

During the first few days in March of this year great difficulty was experienced at the intake in keeping the gate chambers and the pipe itself free from anchor ice, which formed for three nights in such quantities as to materially stop the flow of water through the screens, and in changing screens some ice necessarily got in the pipe. On the fourth day, when the pipe was again running with an uninterrupted flow, the delivery ran as high as 37,200,000 gallons. There seems to be little doubt but that the scraping of the growth of algæ from the inside of the pipe, at least near the intake end, where the growth was no doubt more luxuriant, has resulted in increasing the flow. Similar treatment might be suggested as good medicine to give a pipe line under similar circumstances, when it could not be shut off for a sufficient length of time to allow cleaning.

While the pipe lines are constructed to work under a head equivalent to the high-service delivery, yet the location and height of the main distributing reservoir, taken in conjunction with the profile of the pipe line, suggested the advisability of constructing a second pipe line forty-eight inches in size for the first five miles, and the remaining sixteen miles forty-two inches in size. This is not, therefore, exactly a duplicate line, but will be quite as advantageous when used for delivery at the lower reservoir. The work upon the last line is just being completed, and unfortunately I am unable to give exact figures as to its carrying capacity. It may be interesting to note that where the interior of the steel conduits have been examined, while a very slight growth of tubercules is apparent, they were not as numerous or as large as would be found on cast-iron pipes after being laid for the same number of years.

The steel pipes for these conduits were carefully dipped while hot in an asphaltic preparation, which gave a very smooth and tenacious coating. During the construction of the second line it became necessary to uncover the original line in many places, and the coating was found to be in splendid condition and no indications of rust were apparent (with the exception of such points where slight leaks had occurred) even where the asphaltic coating had been rubbed off by the workmen, and when removed in flakes by a knife there seemed to be a slight brownish skin upon the steel which is evidently equivalent to a secondary coating in itself and is probably due to a chemical action which takes place when the hot pipes are dipped in the asphaltic bath, as this condition would facilitate the combination of sesquioxide of iron with the protoxide, or what would chemically be equivalent to $Fe_2 O_3 + Fe O$ giving $Fe_3 O_4$, a more staple compound, which prevents the further oxidization of the steel, or in other words prevents the continuation of the formation of rust.

A brief description of the method employed in the manufacture and laying of the second steel line may be of interest. All circular joints were made with what may be called the bell end up stream. They were made in the shop in lengths of nearly 30 feet, each length being composed of four plates. The work was very similar to boiler construction and the joints were caulked inside and out. Each thirty-foot section was tested under pressure in the shop. After delivery along the line of the work, two sections were generally rivetted together before being lowered into the ditch, after which the continuous line was rivetted together, the hot rivets being dropped inside the pipe through a one and one-half-inch tap, and the rivet heads of the upper part of the circular seams were made by driving the head on the outside, and for the under part driving on the inside. Joints were then caulked and plugs inserted into the hole through which the rivets had been dropped.

The pipe was generally covered between "field joints," and when sections of the line were completed a "dead" cap was put in the end and pressure turned on to test the new line, any necessary caulking being done where leaks occurred. The new and old lines are connected at advantageous points, so that sections of either line may be temporarily cut out of use for repairs and extermination. No expansion joints were used on either line. The changes in direction and adhesion of the earth seem to be sufficient to prevent any serious trouble from expansion. The lines are supplied with Venturi meters, and constant records are kept of the flow through the conduits.

During the past year twenty-one miles of new conduits have been laid, and in June work was begun upon new storage reservoir dams. This work has progressed day and night, and the indications are that the earth dam, which is about 700 feet long and 60 feet high, will be completed in December, and the spillway dam, some 300 feet long and 55 feet high, of stone, is nearly completed. From 1,000 to nearly 1,300 men have been employed on this work, and I believe it is the first time an earth dam of these dimensions has ever been completed in one season.

BOSTON CARS WILL BE HEATED.

The West End Street Railroad Company, which operate at least 90 per cent of the trolley cars in the city of Boston, will have every car carefully heated this winter in deference to the wishes of the public. There was considerable grumbling last year, as the employes of the road were ordered to shut off the heat between certain hours of the evening when the travel was greatest, as at that time the power was needed for the increased number of cars which were out on the tracks. This year there will be no such cause for dissatisfaction, for a new power station has been built in Dorchester, the central station has been enlarged, and there will be electricity to spare at any time of the day.

SPECIAL ASSESSMENT SYSTEMS.

The report of the committee on taxation and assessment of the American Society of Municipal Improvements opens by drawing attention to the important points in the systems of some of the cities of the United States for the raising of a general revenue by taxation and for assessments for local improvements. The report says:

THE ST. LOUIS SYSTEM.

The laws governing taxation and assessment in St. Louis are lengthy and very minute in detail. Briefly summarized they provide as follows for general revenue: A president of the board of assessors is elected by the people and an assessor for each assessment district is appointed by the mayor and confirmed by the council. The assessment in each district is made by the assessor appointed for the district, under the supervision of the board of assessors, to whom reports are made. All property, real and personal, is included in the assessment. The president of the board makes up the assessment roll, and gives notice by publication in the daily newspapers of the fact that the books are ready for inspection by property owners, at the same time setting forth the time for the sittting of the board of equalization, which shall remain in session daily for four weeks or longer, if necessity requires. This board consists of the president of the board of assessors and four discreet and experienced real estate owners of the city, with a residence of not less than ten years, appointed by the judges of the circuit court. The powers of this board are very extended, authority being vested in it to raise or lower assessments and adjust irregularities and errors. When the board of equalization shall have adjudicated all matters brought to its attention, the municipal assembly makes the annual levy and collects the taxes. For municipal purposes a tax of one per centum is permitted, and to meet the valid indebtedness of the city only such per centum as may be required. This provision, so far as limitations are concerned, does not debar the assembly from increasing the same from time to time, as the improved condition of the taxpayers will warrant, that the debt may be gradually decreased. On that portion of the city denominated "extended limits" the maximum permitted is four-tenths of one per centum for municipal purposes, and one-tenth of one per centum for the payment of the interest on the valid indebtedness as aforesaid. The sums realized from the collection of taxes for municipal purposes and for the payment of the public debt shall be kept separate and distinct. The collection of taxes is made by the collector, who pays the same into the city treasury daily.

The method of special assessments is elaborately provided for in the charter, including plans for the necessary revenue for opening, widening, extending, grading, and otherwise improving streets, and for sewers and such other public improvements as are deemed necessary. For the appropriation of property for street purposes, three commissioners are appointed to determine the value of the land proposed to be taken, and apportion the assessment for damages and value of land among the properties benefitted, after having first determined the amount the city at large shall pay for any benefits it may have derived.

The awards made by the commissioners are viewed and approved by the circuit court, the tribunal appointing said commissioners. Both the property owners and the city have the right to except to the report as made and are entitled to hearing before the court. The court reports its findings to the comptroller, and the assembly takes steps to pay to the property owners respectively their proportion of awards. For the appropriation of land for other purposes than streets, the proceedings are the same. For opening an alley the entire cost is paid by the abutting property.

The cost of construction of public improvements within the city is apportioned as follows: Grading of streets and alleys, making of crosswalks, repairs of streets and highways and cleaning of same and of all alleys and crosswalks are paid from the general revenue of the city. Paving, curbing, guttering, sidewalks, and the materials for roadways, repairs of alleys and sidewalks are paid by special tax against the abutting property, provided such special taxes do not in the aggregate amount to more than 25 per cent. of the assessed value of the property. Public sewers are paid from the general revenue, and district sewers by assessment against the property in the district. In all cases where work of the foregoing character is paid by assessment, tax bills in favor of the contractor are issued against each piece of property included in the assessment and stand as a lien against same. They are collectable as other claims in a court of competent jurisdiction, with interest at the rate of 10 per cent. per annum after thirty days from demand for payment, and after six months at the rate of 15 per cent. Such certified tax bill is prima facie evidence that the work has been done, and of the liability of the owner of the land to pay the same. Right of resisting the collection of the tax bill is provided for, and a pleading may be made that the amount of work has not been done or its character may be attacked. In the event of the property owner tendering to the contractor the amount for such work as was actually done, and it is so determined, then judgment can be secured only for such amount. When the tax bills are paid they are recorded as satisfied by the comptroller, and any bill not satisfied within two years, unless action in court has been commenced to collect same, the lien shall be destroyed and be of no effect against the land charged therewith. The city is not liable in any manner whatever, for or on account of any work done which is paid for in the manner indicated. For sprinkling of streets the cost is also assessed against the abutting property and paid for in the same manner as heretofore stated for improvements.

MILWAUKEE'S WAY.

In the city of Milwaukee provision is made for a tax upon all assessable property, real and personal, for general purposes, a limitation being fixed for each fund for which a levy is made. The maximum levy for the general fund is 6 mills; contingent fund, ½ mill; sewer fund, 1½ mills; special sewer fund, 1 mill; ward funds, 6 mills each, but may be extended to 10 mills under certain contingencies; school fund, 3½ mills. The levy for the

general fund, payment of principal and interest on funded indebtedness, public library and museum shall not exceed 14 mills in any one year. The levy is made by the common council.

The assessment of property, real and personal, is under the supervision of a tax commissioner, ward assessors being appointed for the purpose of listing property and fixing valuation. When completed, the mayor, city clerk, tax commissioner and ward assessors assume the functions of a board of review, and after giving notice for a fixed time of their meeting, sit as a board of equalization. Property sold for taxes is not redeemable after a lapse of three years from date of sale.

Whenever deemed necessary to acquire land for the use of the city the proceedings are by condemnation, and the board of public works is vested with full power in the premises, determining the damages and benefits, and what amount, if any, shall be paid from the ward fund, or whether the entire amount shall be assessed against the property benefited. The proceedings are subject to review, and a property owner may appeal from the findings of the board to the circuit court. Original local improving of streets, such as grading, guttering, graveling, macadamizing, paving, etc., is paid for by assessment against the abutting property, tax bills being issued upon a plan similar to that of St. Louis, while the street intersections, etc., are paid for out of the ward fund, as well as the future maintenance and keeping clean of the streets paved. Constructing docks in front of lots or parcels of ground along the rivers and canals and dredging of same is charged by special assessment to the property so fronting. Water pipes (main lines) are laid on streets and cost assessed against abutting property.

THE DENVER METHOD.

In the city of Denver the general assessment is made by the assessor of the county of Arapahoe, and is reported to the city council by the county clerk when completed. The power of levying taxes for general purposes is vested in the city council, and shall not exceed in the total for all general purposes 10 mills on the dollar valuation upon the assessment as returned by the assessor. This limitation does not apply, however, to the levy of taxes for the payment of the bonded indebtedness or interest on local improvements. In addition thereto a levy of 1½ mills is authorized for the purchase of sites for public parks and improving and beautifying the same. A nominal percentage is allowed the county for making the assessment and collecting taxes.

The city council has power to issue bonds for any and all local improvements, the provisions of the charter being very broad and comprehensive in this particular. The cost of local improvements may be assessed in whole or in part against the property benefited. The cost of paving street intersections, excepting rare cases of triangular intersections, is included in the assessment against the district for paving the street. Storm water and district sewers are constructed at the cost of the property in the district, as are sidewalks, viaducts and tunnels. It is provided that the special assessments may be made payable in installments, when so desired by the owners of property. Failure to pay one installment in the prescribed time makes the entire assessment delinquent, unless said installment is paid before the sale of the property takes place.

With but few exceptions this system is identical with the one in use in the city of Omaha.

BOSTON'S SYSTEM.

In the city of Boston the council has power to levy and collect taxes for general revenue and for special improvements. The council appoints assessors to the number that it deems necessary, and the assessment of property, real and personal, for general purposes, is made in the usual manner. A limit of $9 on each $1,000 of valuation of property is provided for, and the levy cannot exceed that amount. Boston levies a poll tax also.

In payment for public improvements the usual plan of assessing by special tax the abutting property is carried out. In cases where damages exceed benefits and the city is benefited by an improvement, a portion of the expense may be paid from the general revenue. Tax bills, which are a lien against the property, are issued in payment of the amount assessed against each parcel of ground, and are payable in annual installments, bearing interest at the rate of 4½ per cent. per annum.

THE NEW YORK SYSTEM.

There are at present two distinct systems in vogue in New York. The opening, widening, etc., of streets, involving the taking of private property, is undertaken, with certain formalities of a legal nature, before the courts, thus coming within the jurisdiction of the law department and board of street openings. In the other cases—building, walls, paving and repairing streets, construction of sewers, etc.—the assessment for benefit is made by the board of assessors and board of revision and correction. In explanation of the assessment let us take the system of street improvements. The work is carried out by the proper department, and at its completion the cost thereof is certified to the board of assessors. This board consists of four disinterested persons, selected by the commissioners of taxes and assessments. Upon receipt of the certificate of cost they transmit the same to the comptroller for an indorsement of the interest chargeable upon such advances as the city may have made during the progress of the work. When thus returned the board proceeds to assess the amount expended upon the property owners to whom the special benefits of the improvement are to accrue. The board determines the area of the district and the extent of the benefits, unless a permanent area has been established, as in sewer districts. The charge is made according to the individual benefit, subject to two limitations, namely, that it does not exceed the benefit and that it is no greater than one-half the assessed value of the property. Upon completion of the assessment roll ten days' notice by publication is given and the property owners are allowed thirty days in which to present objections in writing. The board may then alter or modify the assessment list. If objections still remain the roll is sent to the board of revision and correction. This board consists of the comptroller, recorder and corporation counsel. They confirm the assessment

or return the list for further correction and revision. Assessments for street openings are somewhat different. Proceedings for the opening of new streets are instituted by the board of street openings and improvements. Three commissioners constitute this board and are appointed by the supreme court from two lists of names submitted by the property owners and the city. The commissioners are allowed four months for the performance of their duties. After viewing the premises to be taken and hearing interested parties, a report upon damages sustained and benefits accrued is made up. The damages and benefits are separately determined, and all expenses are assessed upon the property owners in the way of benefits, unless provision has previously been made for a specific portion of the cost to be met by the corporation. Before reporting to the court notice is given by publication for thirty days of the intention of the board to report at a certain date, and that it will hear within the ten days next succeeding the thirty days after the publication any objection thereto in writing. After making corrections or alterations the assessment is reported to the court. If interested persons then still object to items aggregating more than one-half of the total, all further proceedings may be discontinued if such persons so desire. Otherwise, after considering the complaints made, the court either affirms or remands the report to the commissioners for correction.

In New York assessments for benefit become both a lien against the property and a personal liability of the owners. If unpaid after sixty days, interest at the rate of 7 per cent. per annum is charged. Assessments for certain improvements are payable in installments each of 5 per cent. of the total amount charged, with 7 per cent. interest upon the sums still unpaid. Whenever an assessment is unpaid for three years the clerk of arrears proceeds to collect the same by public sale of the property.

VARIANCE OF SYSTEMS.

While the New York systems may in a measure be called typical, yet other cities are not supplied with a duplicate procedure. Baltimore, Boston, Cleveland and Washington have but one set of assessment officials. The power to initiate proceedings for special assessments may be concentrated in the common council, as in Chicago, Cleveland, New Orleans, Omaha, Philadelphia, San Francisco and Washington, or in the executive departments, as in New York, Boston or Jersey City, usually the department of public works. The general purposes to which is applied the system of special assessment are the construction and improvement of streets. However, the system is applied to other uses. Chicago, Philadelphia and St. Louis may levy the expense of laying water pipes against the abutting property; Chicago levies the cost of erecting lamp posts; Cleveland, Minneapolis, Omaha and St. Louis may impose special assessments for street sprinkling, and so on through the list of cities and purposes for which levies may be made.

We find many safeguards thrown about property owners to prevent hasty or unjust taxation for special purposes. Yet in Boston, Chicago, New Orleans, Philadelphia and Washington, the wishes of parties interested need not necessarily be consulted, no petition for action being required. On the other hand, a petition is necessary in Baltimore, Denver, Cleveland and Omaha, or a remonstrance must be heeded. The usual method is pursued of giving notice of an intended improvement, or of giving a hearing to property owners when it is proposed to levy the special assessment. In St. Louis the board of public works hears remonstrances; in Cleveland, a special board of equalization; in Omaha, the common council; in Chicago, three members of the council or other competent persons and three commissioners appointed by the court to apportion the assessment. In Washington, however, a property owner may not hear of a special assessment until presented with a tax bill, and this is true in Philadelphia for sewer and water pipes. In Washington, New Orleans and Boston the property assessed must abut upon the line of work, while in many other cities districts are created, property being included that may be determined as benefited. In some cities limits are fixed for the amount of the assessment per front foot, applying more particularly to sewer and water pipes. In all cases the assessments are made a lien upon the property, and in some cities become a personal liability of the owners. Various methods are adopted for the collection of the assessments, the general rule being that applied in the collection of general taxes.

RULES OF SPECIAL ASSESSMENT.

The recognized rules of special assessment for benefit are universality, equality and uniformity. By these is the justice of public impositions usually determined, and most frequently the objections to special assessments are alleged inequality and lack of uniformity. Such charges for benefit are not universal, as they do not attach to all subjects within the state, or even to all those within the political jurisdiction imposing them. If they did the difference from ordinary local taxes would be slight. They do possess the quality of universality within the district specially created. All become subject to the imposition whose circumstances place them within the rules laid down for liability. There are neither exemptions nor exceptions among those who would otherwise be included within this exercise of the taxing power. Within the district of apportionment the demands of the rule of universality are fully met.

Complaints of inequality and lack of uniformity arise likewise from a similar view. Only to those who have in mind some ideal system of taxation does special assessment for benefit appear to operate unequally. If we accept the standard of individual property, income and expenditure, special assessments are certainly defective. But is it proper or scientific to test one system by the forms applied to a totally different system? The only method by which the equality or inequality of any public contribution can be determined is by asking whether it operates alike upon one and all who are found in the same relative position. The natural inquiry here then is whether one owner receiving a certain benefit from an improvement is subject to a burden equal to that imposed upon every other owner deriving a similar benefit. The theory of special assessment makes every one subject to taxation in proportion to the benefits derived. In this there is

nothing unjust by reason of inequality or lack of uniformity.

The very idea of special assessment precludes the soundness of all objections on the ground that the apportionment departs from the ratio of ability to pay, unless it be contended that no public burden not imposed according to the ability of the contributor to pay can never be regarded as just. Whatever be taken as the evidence of ability to pay, special assessments for benefit will be seen to be unpardonable sinners against the rule adopted. They are not levied in the ratio of the value of the property, for it frequently occurs that a worthless strip is increased in value to a greater extent than a valuable one. Neither do they conform to the variations of income, for an owner who derives no income from his property may be subject to as heavy an assessment as another who receives in rentals from a tenant a fair return each month. Nor do they bear relation to the expenditures of the assessed, for the present purposes to which property is devoted are immaterial to the assessor. If there be any injustice in a special assessment it must lie in this: Where an expense is to be incurred by a local authority which results in special, distinct and measurable advantages to the property of particular individuals, it is more equitable that those who benefit thereby should contribute to the expense to the extent of those benefits than that the burden should be placed upon others who have received no such special benefits.

PAVING ASSESSMENTS.

The application of a system for an assessment of the cost of paving a street could hardly be made identical with one to meet the expense of constructing a sewer. No more could the latter system be made applicable to one involving the appropriation of private property for the opening of a new street or the widening or extending of another. Thus it must be apparent at once that each branch of a local improvement must have a system of special assessment so constructed as to be entirely just and equitable and at the same time conform to the conditions surrounding that of each character. While the underlying principle may be identical, the detail of each is necessarily different. Therefore your committee would direct the attention of the convention to what we deem the best system of assessment for benefit where a street is improved by paving or repaving.

Before a street is thus improved, we believe the greatest publicity for the purpose of informing the property owners, should be adopted. For instance, after the plans, specifications and approximate cost, if not the actual cost, with all details, have been settled by the city, they should be given at least twenty days notice in the public press, as well as written personal notice, to all the owners of property that the same is on exhibition for their examination and any suggestions or complaints they wish to make; that at least ten days, after the expiration of notice, should be given for the consideration of all protests and suggestions of property owners for changes, or the correction of errors, or the abandonment of the work; and in case of failure of city officials and property owners to agree, the same should be finally submitted to a court designated for that purpose, to be corrected, confirmed or rejected within a given time. If confirmed, during the progress of the construction of the work, property owners should be invited to file complaints if work is not being done according to contract, and, if well founded, city officials should have the same immediately corrected. If so corrected, and the work finally done, the property owner should be barred from protest or maintaining an action in court against the payment of the assessment on account of any omission, error or mistake of a technical or legal nature for any cause other than actual fraud and corruption.

With this step in the proceedings comes the question of what is the best system for the pro rata assessment. So important is this matter that the committee feels that local conditions should govern, taking into consideration, of course, that the paramount rule to apply is what benefit has been conferred by the improvement. With the assessment made along the lines indicated, the next inquiry, and an important one, is how are the assessments to be paid; as a whole or in yearly installments at a fair rate of interest annually on the unpaid portion. We are convinced that the best method is the issuance of short time bonds to pay the cost of improvement, that the contractor may receive cash, and the benefit of lower prices thereby accrue to the property owner. The short time bonds should run from one to ten years, be in small denominations, and bear the lowest rate of interest they can be successfully floated at. These bonds should mature as the installments of the assessment fall due and are paid, that they may be taken up and the obligation cancelled. This method renders less burdensome the imposition of the taxpayer, as we find that cities pursuing this course, paying the contractor in cash, are able to secure more active competition and better propositions at less money than those that follow other plans. In many cities the cost of intersection paving is included in the assessment against the property within the district, while in others the intersections are paid for from the general revenue. The latter method, we feel, is the most just to all. With the addition of such details as conditions demand, we believe the foregoing is a fair and impartial proposition for the assessment of the cost of paving or repaving.

SEWERS, WATER-WORKS, ETC.

For a system to cover the cost of construction of sanitary and storm water sewers, we are convinced that the creation into districts of such property as will be benefited is proper and just. Drainage or main sewers should be paid for by the city. The system to apply for assessment, with all conditions duly considered and properly adjusted, should be nearly identical with the one proposed for paving.

Where cities and towns operate their own systems of water-works, it would seem that the laying of pipes in streets should be at the joint expense of the property benefited and the city at large. Whether this assessment should be met in one or more installments, the committee is hardly prepared to advise. This problem would be one for the assessing board to solve, taking into consideration the amount of the assessment and the ability of the property owner to meet it in one payment.

When it comes to the recommendation of a plan to meet the cost of appropriating private property for the use of the public, the committee hesitates. So many features are presented in these cases that it is nearly impossible to make one analogous to another. In one instance the benefit may accrue almost wholly to the city at large and the immediate property may not profit thereby. On the other hand the benefit may be to the abutting property alone. In any event the determination of what the benefits may be should be left to the discretion of the assessing authorities.

WOODEN BLOCK PAVEMENTS.

BY COL. M. A. DOWNING, BOARD OF PUBLIC WORKS, INDIANAPOLIS.

Some of the leading cities in this country have discarded wooden blocks for use as a street paving material, and what views I have to present in favor of wooden pavements will, perhaps, not be in accord with the ideas entertained by many departments of public works. I think I am correct in saying that ninety-nine out of every one hundred wooden block pavements laid in this country have been put down in either a sand or board foundation—the surface consisting of round or rectangular cut blocks untreated with a preservative of any kind.

An agitation, during the spring of this year, on the subject of wooden block pavements resulted in the city controller of Indianapolis and myself visiting the cities of Galveston and New Orleans, to ascertain as to the merits of yellow pine blocks treated with creosote oil. We made a careful examination of this material. In Market street, Galveston, samples of yellow pine block were taken which had been constantly subjected to heavy traffic since 1875. They were found to be as sound as the day laid and are blocks which are indestructible so far as decay is concerned; are impervious to water and free from microbes. So well had the creosote been retained in the block that it was possible, under pressure, to extract it. The pavement from which this sample block had been taken was, however, somewhat uneven, owing to the imperfect foundation of sand on which the blocks had been laid.

A sample of a large yellow pine block was taken from a pavement laid in 1872 at the main entrance to the works of the New Orleans Gas Light Company, which, during the past twenty-four years, had been subjected to the severest test in the way of heavy hauling that any pavement in that city could be subjected to. This pavement was found to be in perfect condition, showing no indication whatever of decay and little of wear. It had been laid with creosoted blocks upon a tarred board foundation and was the only pavement of that kind in New Orleans.

A granite block pavement had been laid in the street adjoining this driveway and consequently had been subjected to the same heavy traffic as the wooden blocks. It was quite apparent, on examination of the two pavements, that the granite pavement had worn down a depth of 1½ inches, while the wooden block only showed a half inch depression.

To successfully creosote blocks, all the sap and moisture must be extracted by means of a vacuum pump. The creosote oil must then be forced into the block under pressure of from seventy to one hundred pounds, using twelve to fourteen pounds of oil to every cubic foot of block.

As a result of this investigation the following conclusions were reached as to the proper method to be pursued in laying block pavements, that is to say, such a pavement as could be subjected to heavy traffic for a period of from twenty to thirty years and yet remain and be in good condition :

First. The use of yellow pine block, treated with creosote in the manner before described.

Second. A large sized block to be selected, the dimensions to be not less than 4x6x9 to 12 inches long.

Third. The foundation to be of concrete six inches in depth.

After a thorough investigation as to the merits of the different woods, the board was led to believe that the long-leaf yellow pine was the best, from the fact that the fibre is very strong and will stand any amount of pounding. To secure the best results the engineer in charge of the work for the city must employ competent inspectors, whose duty it shall be to make the most rigid inspection of all work done. The blocks must be planed to a uniform depth and thickness. This to insure a perfectly smooth surface with practically no interstices.

This will be the character of wooden block pavements which we will provide for Indianapolis during the period to which the present administration shall have charge of her municipal affairs. It will be a pavement easily kept clean; free from that noise which is so annoying to many property owners living on brick and asphalt streets ; favored by owners of vehicles for the reason that it is not injurious to the horse, and in many other respects has advantages over other pavements.

WATER-WORKS AND WATER SUPPLY.

The committee on water-works and water supply of the American Society of Municipal Improvements, of which Harrison Van Duyne, of Newark, was chairman, submitted an interesting report at the recent Chicago convention. The important portion of the report follows:

During the past year, perhaps the most general and serious cause of complaint in connection with water supplies, has been due either to impurities from sewerage contamination in lake or river supplies or to the objectionable odor, color and taste which are sometimes detected in supplies drawn from storage reservoirs, especially during the summer months.

It seems to be universally conceded that the objectionable conditions found in connection with stored water supplies arise from the growth of algæ or other organisms in the water, which organisms sometimes decompose after the water has entered the distribution system. While it has practically been demonstrated that this growth, and the condition of affairs resulting therefrom, are not necessarily injurious to health, yet they produce very objectionable and undesirable results, which should as far as possible be prevented. Not only does the growth of algæ in the reservoir affect the quality of the

water supply at the time, but its effects are apt to be of a more permanent nature by growing within and fouling the pipes, thus considerably reducing their carrying capacity, besides making the water turbid or roily in its passage through the distribution system.

So far as your committee has been able to look into this question, one of the most effectual means of prevention of trouble from this source in most cases is the removal of shallow places in storage reservoirs and the exclusion of sunlight from distributing reservoirs where such growths are liable to form, while in some cases a thorough aeration of the water from the reservoir before the same is delivered into the distribution system will be found extremely beneficial. These methods, however, are not always practicable, owing to the want of funds or for other reasons; nor can they in every case be depended upon as effectual remedies, as the normal condition of the water and local circumstances require in every instance careful, scientific and intelligent study. The aeration of water supplies subject to these growths has, however, produced such satisfactory results that, in designing or remodelling works liable to be affected by them, the engineer should always, in the opinion of your committee, carefully consider the advisability of embracing this feature in his designs.

Another difficulty which seems to have caused more trouble than usual during the past winter in connection with the management of water-works, especially in our northern cities, was the formation of anchor ice on screens at the reservoirs and intakes, which in a number of instances caused an entire stoppage of the flow and a complete shutting off of the supply, sometimes for days at a time. This situation is so serious and happens so suddenly, and often without warning, that adequate measures should be taken to prevent such a condition of the water from interfering with the maintenance of a supply. In designing works it should seem not only advisable, but absolutely necessary, to take this factor into consideration. A remedy can sometimes be applied by placing the gate-house on the most protected side of the reservoir, if, indeed, it would not be well to provide duplicate gate-houses. This would also lead to the suggestion of considering the advisability of arranging the principal discharge and distribution mains, as far as practicable, in a dual manner, to provide against sudden interruptions and emergencies. It will often be found convenient to arrange feeders in pairs, that one can be cut out temporarily without materially affecting the supply.

The subject of pollution, while the most important phase of the water supply question, is one which must of necessity be taken up by each community for itself. Your committee, while holding their own opinions on the subject, are not at present prepared to define a standard of purity for water for domestic purposes. There are, however, certain positively harmful impurities, the allowable limit in the quantity of which might with advantage be more generally agreed upon. Feeling that this is of vital importance to the public water-supply question, we would respectfully recommend the collection by this society of data and analysis, both chemical and biological (see particularly the latter), which can be made the basis of a thorough report on this important question.

The continuous and eventually dangerous action of electrolysis upon the underground piping of a city, and the fact that no entirely satisfactory means of preventing this action from taking place to some extent, would also suggest that this subject be made one for special investigation and report by the society.

Among the results of the year, in connection with the water-supply question, is the more definite determination of the carrying capacity of riveted steel pipe lines. We are glad to be able to report that what has hitherto been a disputed problem between some hydraulic engineers of the highest standing in their profession on this continent, has been apparently satisfactorily determined and solved by the recent measurements of the flow through the twenty-six miles of the Newark conduits.

THE GARBAGE QUESTION.

I.—THE ENGLE SYSTEM.

Garbage disposal is one of the most important matters demanding the attention of city officials. It is a subject to which the municipal authorities of this country may profitably give much study, as it is one that involves the health of communities. That the collection and disposal of a city's waste in a sanitary manner is necessary to the preservation of the public health is no longer denied, and the only questions to be studied now are those of methods and expense. Mayors, councilmen and health officers in hundreds of American cities and towns are seeking information on "the garbage question," and with a view to aiding them in their investigations, CITY GOVERNMENT has arranged to publish a series of special articles on the collection and disposal of garbage. The literature on this subject has been rather scarce, most of it emanating from parties interested in the various reduction and incinerating systems and consequently written on the bias. CITY GOVERNMENT has no particular interests to guard in this matter, and whatever we publish may be taken as reliable and impartial. We shall first take up the various systems for the disposal of garbage, with a brief description of each, to be followed by impartial reports upon the practical working of each system.

The Arnold and Merz reduction systems and the Engle, Burns, Rider, Brown, Dixon, Smith, Thackeray, Mackay, and Brownlee incinerating systems will be treated. The Engle was the first garbage cremator introduced in the United States, the first furnace having been built at Des Moines, Iowa, in 1887. Engle furnaces are now in use in about forty cities and towns. In a paper read at a meeting of the Massachusetts Association of Boards of Health, Dr. James B. Field, chairman of the Lowell board of health, gives the following description of the Engle furnace and its work:

The swill teams, driving into a covered enclosure on top of the furnace, dump the garbage directly into a large garbage chamber with grate bars and linings of heavy fire-clay. At each end of this garbage chamber is a fire-box. The flames from the fire nearest the stack pass over the garbage, igniting it and driving the smoke and gases across the second fire, where they are con-

sumed. The flame from this second fire is drawn by a strong draught underneath the garbage grates, intensely heating the garbage from below. This flame passes out through the stack, with but little color and a scarcely perceptible odor. From doors on the side the garbage is frequently stoked, and from a lower set of doors the ashes are raked out.

The furnace in Lowell, known as an extra No. 4, was erected in the fall of 1892, at a cost of $7,500. It is 42 feet long, 9½ feet wide, and 12½ feet high, outside measurement. The stack is 30 feet of brick and 60 feet of iron.

As the cost of burning was at first unsatisfactory, a temporary plant for burning by oil was introduced. This may have reduced the cost a trifle, and undoubtedly would have more had there been a permanent oil tank, so that oil could have been bought by the car instead of by the barrel. The only real complaint from using the cremator arose from the smell of the oil, due possibly to the temporary methods of its storage. There was also some danger to adjoining buildings from sparks, caused by the strong draft from the oil blower. The use of oil was finally abandoned, although in cities where oil is cheap it has been advantageously substituted for coal.

For the past three years we have kept accurate records of the weight of garbage cremated and the amount of coal necessary to consume it. Each week a statement is prepared, showing the amount of garbage consumed and the cost in coal and labor to effect its consumption. The health department of Lowell has no garbage furnaces to sell, and is not in league with the promoters of any system of garbage disposal. If other cities only gave us full and unbiassed figures as to the cost of treating their garbage, it would do much toward settling the vexed problem of what is the best system to use.

At Lowell in 1893 the most expensive week's burning was at the very high rate of $2.75 per ton. This, however, was the first week in which a full account was kept. Excluding this, the most expensive burning for a full week was at the rate of $1.94 a ton in 1893, $1.53 in 1894, and $1.31 in 1895. The least expensive week's burning in 1893 was at the rate of $1.15 per ton; in 1894, $1.02 per ton, and in 1895, 81 cents per ton, thus reducing our lowest cost of combustion 34 cents a ton in two years.

To take, however, the least expensive week may not seem a fair comparison. The period from April 1 to October 1 can be compared for each year. For these six months in 1893 the average of cost for fuel and labor for burning a ton of garbage was $1.57; in 1894, $1.17, and in 1895, 99 cents, a reduction of 56 cents in two years. About the middle of last July a change of firemen was made at the Lowell cremator. For the eleven weeks succeeding this change the cost of burning garbage has not averaged over 84 cents per ton.

Below is an itemized account of the least expensive week, August 26 to 31 inclusive, 1895:

Material Burned.		Expense.	
Swill	167,742 lbs.	8 tons soft coal at $4.30	$34.40
Market refuse	31,430 lbs.	4 tons nut coal at $4.65	18.60
9 mattresses		1 man 7 days at $2.25	15.75
5 dogs		1 man 6 days at $2.00	12.00
6 cats			
8 bundles of rags		Total	$80.75

100 tons at $0.81 per ton.

[Since the date of this report by Dr. Field, the cost of operating the Lowell cremator has been further reduced. In August, 1896, the cost of burning 109 tons of garbage was computed at 68 cents per ton.]

Lowell has to pay high wages for labor, and more for fuel than almost any other Massachusetts city. Whether coal is brought by all rail or partly by water, the freight rates are high. Seaboard cities, or those situated nearer the coal mines, will make a better showing than does Lowell. In other cities using the Engle cremator, th of operating is much less than with us. Especially good results are obtained in the South, where fuel and labor are cheap. In Savannah, where pine wood is used as fuel, a sworn statement of the cost of fuel and labor for four summer months gives a rate of 12.3 cents per cubic yard. If a cubic yard of swill weighs two-thirds of a ton, as it does in this locality, this would give the cost as 18.5 cents a ton. If our Lowell furnace could obtain similar fuel and labor, the cost would approach these figures.

The Engle cremators at Norfolk, Va., and other places are operated at smaller expense than the one at Lowell. W. T. Brooke, city engineer of Norfolk, in his report for 1893–4, says:

There were 8,756 cartloads of garbage burned during the fiscal year, including dead animals, decayed meat and fish, and spoiled fruit and vegetables, making about 13,000 cubic yards, or 9,000 tons of garbage. The cost of cremating this has been for full labor, repairs, etc., $3,621.53, or approximately 40 cents per ton.

When it is remembered that, without the cremator, this amount of garbage, sufficient to have covered the area of Granby street, from Bute to Maine, two feet deep, would have been dumped on the suburbs of the city, as has been done for years past, there to fester and pollute the air, it can but be a subject for congratulation that we have some better means of disposing of it.

Engle furnaces of the latest construction have been built at Evansville and Richmond, Ind., using oil for fuel, and at San Salvador, C. A., and the Brooklyn Navy Yard. Important changes in these new furnaces make them more efficient and durable, and decrease the cost of operation considerably. In San Salvador, where the garbage is without liquids and almost entirely vegetable in substance, the furnace is operated with practically no fuel. Special apparatus for drying and removing the moisture is being introduced and has proved a remarkable success.

The abandonment of all iron which has heretofore been exposed to the fire in the Engle furnaces, and the substitution of indestructible grate bars made of fire-clay blocks dovetailed together, has, perhaps, been the most important improvement feature of the internal construction. A special arrangement of fire-clay blocks to retain and detroy all carbon contained in the results of incineration is a feature of the latest Engle furnace.

Your excellent publication, CITY GOVERNMENT, has been received and read with interest. I am in most hearty sympathy with the objects of your paper, and wish you the full measure of success which you deserve.—Geo. E. Briggs, Pittsburg.

CITY GOVERNMENT is a new monthly publication "devoted to the practical affairs of municipalities." Its scope is best discerned in a glance at the table of contents of the November number, consisting of an account of recent meetings at Chicago of the American Society of Municipal Improvement, city government of Nashville, advantages of an asphalt testing laboratory, paving streets with brick, modern street railway construction, excavations in city streets, testing paving brick, repairs of asphalt pavement, railroad taxation in New Jersey, and Philadelphia's city hall, a fine picture of which occupies the cover. Besides these formal articles are editorial discussions of various matters relating to city government. The publication will meet a real want, and is ably conducted. It is a folio of 32 pages, and is exceedingly attractive in appearance.—Detroit News.

CITY GOVERNMENT.

A MONTHLY MAGAZINE FOR CITY OFFICIALS AND OTHERS INTERESTED IN MUNICIPAL AFFAIRS.

PUBLISHED BY
CITY GOVERNMENT PUBLISHING CO.

B. F. GILKISON, *President.* CHAS. WARD, *Sec'y and Treas.* H. J. GONDEN, *Editor.*

NEW YORK, 150 Nassau Street. | CHICAGO, 825 Monadnock Block.

SUBSCRIPTION, $3.00 A YEAR, INVARIABLY IN ADVANCE.
SINGLE COPIES, 25 CENTS.
ADVERTISING RATES MADE KNOWN ON APPLICATION.

All remittances and business communications should be addressed to City Government Publishing Co., 150 Nassau Street, New York.
All Communications to the Editor should be addressed to the New York Office.

NOTE AND COMMENT.

St. Paul has many miles of asphalt paving and has been letting asphalt contracts since 1886. Its experience, consequently, is interesting from the fact that it is no longer an experiment; "not a theory, but a condition." St. Paul's first pavement of asphalt was laid on Summit avenue, the principal residence street of the city. It was laid with Trinidad asphalt at a cost that varied from $2.61 to $2.86 per square yard. In 1894 two of the principal business streets were paved with Trinidad asphalt at from $2.52 to $2.60 per square yard. In 1895, after Washington, Detroit and other large cities successfully experimented with other than Trinidad asphalt, St. Paul entertained bids on the three varieties known to commerce as Trinidad Pitch Lake, Bermudez, and Utah asphalt. This resulted in two contracts—one for Bermudez for $1.96 a square yard, and one for Trinidad at $2. The 1896 pavement was laid at the average price of $2.46 per square yard, and five of the principal business streets were paved with Bermudez and three with Trinidad. This price did not include excavation, but included removing the old pavement, laying a six-inch concrete foundation, a one-inch binder coat and a two-inch wearing surface.

Assistant City Engineer Wilson, of St. Paul, who is perhaps more familiar with the asphalt question than any one else in that city, says: "We find that it is impossible for the expert to decide what kind of asphalt has been used in the pavement after it has been laid and is in use. The public in general knows no difference. Those streets which accommodate more traffic than any other in the city are paved with Bermudez; they are Fourth, Robert, Wabasha, Fifth and St. Peter streets. As a matter of fact the majority of the streets where the traffic is the heaviest are paved with Bermudez. We believe that a satisfactory pavement of either Bermudez or Trinidad can be laid, dependent solely upon the intelligence and care of the contractors who lay it. With Utah asphalt we have had no experience, simply because the Assyrian Asphalt Company, which produces it, has always been the highest bidder. We are entirely without prejudice in the matter. It is a notable fact that as soon as competition began prices were lower. St. Paul is probably one of the cheapest points in the United States at which asphalt may be laid, for the reason that a fine quality of sand may be procured here at nominal cost, and the limestone dust used is available here in large quantities. The following residence streets are laid with Trinidad Pitch Lake, on a ten-year guarantee: Summit, Holly, Portland, Western, Dayton and Oakland avenues, and Kent and Arundel streets; the following business streets are laid with Bermudez: Fourth, Sibley, Sixth, St. Peter, Wabasha, Robert and Fifth streets; they sustain the greatest amount of tonnage in traffic. You may say to your readers that St. Paul is absolutely impartial in the matter, and that the streets sustaining the heaviest traffic are paved with Bermudez asphalt, and are giving splendid satisfaction. In speaking of Trinidad it should be noted that I refer to Trinidad Pitch Lake. As to the Trinidad land asphalt, we have never used it, and I believe that it has never been satisfactorily laid."

Conversations with various other St. Paul officials, including the members of the board of public works and a firm of contractors who have laid both varieties, convince our correspondent that both have proved themselves satisfactory, and that the Bermudez asphalt is at present sustaining the greatest tonnage in traffic. An interesting conversation with a chemist employed by the contractors for paving during 1896 confirms the above statement. He stated that if the six-inch concrete bed is permitted to harden before the binder coat is put on, and then the binder coat allowed to cool before the wearing surface is added, the asphalt will be perfectly satisfactory. He further adds that it is the constant endeavor of asphalt companies to make much of a particular brand of asphalt, and that often cracks and hollows occur in streets laid with any asphalt, which are seized upon by one company or the other as a proof of the superiority of their brand of asphalt, but which are merely results of carelessness and negligence in not properly laying the foundation, or of too much haste in putting on the binder coat, and have nothing whatever to do with the asphalt itself.

A couple of weeks ago the board of aldermen of New York City granted a franchise to the Consumers' Fuel Gas, Heat and Power Company, giving it the right to tear up the streets and lay pipes all over the city. Mayor Strong announces that he will veto the bill, because he believes the rights which the aldermen have voted away practically without remuneration to the city are worth at least $10,000,000. Believing that the franchise would pass over the mayor's veto, the New York Journal has promptly instituted injunction proceedings to restrain the aldermen from making the measure a law, and now the matter will have an airing in the courts. The action of the Journal achieves a great deal; it delays the granting of the franchise and gives an opportunity for a full investigation into the merits of the case, and it very forcibly reminds the aldermen that they cannot rush through important bills giving away the rights of the public with-

out having their motives questioned. The people of American municipalities are beginning to realize the value of their streets, and they demand a just remuneration for the use of the same by corporations and individuals. The time for franchise-grabbing in the progressive cities of this country is about over.

The Litho-Carbon Asphalt Paving Company, of New York, is having a heap of trouble in Troy. They took a $60,000 contract for paving First street, in that city, and now, when the job is partly completed, the city engineer reports the material not up to the specifications of the contract. The property owners are complaining, and it is likely that the pavement already laid will have to be torn up. City Engineer Schenck says the asphalt used in the work lacks five per cent. of bitumen.

George Fred Zeller, chairman of the Buffalo board of fire commissioners, has resigned. In the November number of CITY GOVERNMENT Mr. Zeller was sharply and justly criticised for displaying rank favoritism in the purchase of fire hose. It was Mr. Zeller who made it impossible for the hose manufacturers of this country to compete for the business of the city of Buffalo. He made the ridiculous claim that only one make of hose was fit for use in Buffalo, and the specifications under which bids were asked were drawn so that no other make of hose could be offered. This was rank injustice to the hose trade as well as to the taxpayers of Buffalo. Now that Mr. Zeller is out of office, it is to be hoped that the new board of fire commissioners will look after the interests of the taxpayers rather than those of any particular manufacturing concern. The case of Ex-commissioner Zeller, forced out of office by public opinion, will serve as a warning to all those city officials who transact public business in deference to their personal whims rather than to the best interest of their constituents.

The proposition to extend the Chicago water supply tunnel should be killed. As Ald. Gunther says, it would merely result in spending $135,000 uselessly and putting a good profit into the pockets of favored contractors. The way to improve the water supply of Chicago is not to tunnel farther out into the lake, but to cease turning the sewerage of the city into that useful reservoir. By the time the water tunnel could be extended the new drainage canal will be ready for use.

Alderman W. M. K. Olcott, of New York city, is of the opinion that the time is ripe for the city to build and operate its own gas plant. The gas companies of New York have recently formed a combination which destroys all competition and cuts off all possibility of lower rates and improved service. New York ought to have gas of the best quality at $1 or less per thousand feet, but it will never get this boon so long as the gas combine continues to be all-powerful. The formation of the gas trust inspired Alderman Olcott to introduce the following resolutions in the council:

Whereas, It is essential to the well-being, health and comfort of the citizens of the city of New York that each inhabitant should be afforded the opportunity to obtain the best and purest light and fuel at the lowest possible cost to the consumer; and

Whereas, This necessity is on the same principle as, and only second in importance to, that which prompted the city to provide for every householder the purest, best and cheapest water furnished by any city in the world of equal population; and

Whereas, The use of gas for illuminating purposes and for fuel and for use as a power in manufacturing and in the arts and sciences has largely increased, and with it has increased the necessity for the economical production of gas; and

Whereas, The recent combination between the old gas companies and the new best illustrates the futility of expecting reductions in the price of gas from the establishment of competing companies; and

Whereas, This municipality has itself failed to secure cheap street lighting, because in advertising for competitive bids for that purpose it has been the invariable experience that there is not real competition, but that the different companies apportion among themselves the different districts of the city, and offer non-competitive bids for the respective districts; and

Whereas, The cities of Philadelphia, Richmond, Va.; Wheeling, W. Va.; Hamilton, O.; Birmingham, Leeds and Bradford, England, and Aberdeen, Edinburgh and Glasgow, Scotland, have each become the owners of the gas plants situated in such respective cities, and a consequent reduction has thereby resulted to the consumers of gas in such cities,

Resolved, That the president of this board of aldermen appoint a special committee of seven of its members to make a thorough investigation of the feasibility and practicability of municipal ownership of gas plants, the cost of manufacturing gas as now carried on by the existing companies, the price at which the city could deliver gas to the inhabitants thereof, should it become the owner of the gas plants, together with all other material facts in coneection therewith that may be deemed necessary by said committee to give information to the mayor and board of aldermen of this city on the matter in question; and

Resolved, That said committee cause to be prepared a bill to be presented to the legislature of this state to carry out their recommendations in that behalf, and vigorously urge the passage of the same in the interests of the city and its inhabitants.

The resolutions were promptly passed. The committee was appointed as follows: Aldermen Olcott, Oakley, Burke, School, Goodwin, Hall, Windolph, and President Jeroloman, ex-officio.

The city of Boston is giving a good deal of attention to the tearing up of newly laid pavements for the purpose of reaching pipes and wires and for laying new underground construction. Much trouble has resulted from the subsequent settling of the pavement and a new rule which, it is hoped, will prevent this trouble, has gone into effect. The rule requires that an additional foundation of eight inches of Portland cement shall be placed under the pavement wherever it has been opened. It is thought that even if the earth does settle after the pavement is repaired that the cement addition to the foundation will make it a strong enough bridge to support the pavement at its proper level.

There are engineers and theorists who believe that in the next century all this trouble will be prevented by a conduit system. That system contemplates the excavation of a conduit in the middle of a street with masonry walls strengthened where necessary by steel yokes. In

this all water pipes, gas mains, electric wires, and other distributing devices will be placed, and a narrow passage way on each side of the pipes and conduits will serve for inspection, repairs and attachments of service lines.

Manholes placed at intervals will afford entrances to the conduit, and in case a new residence wishes to obtain connections with the water, gas or sewer pipes or to obtain electric current from the wires, a small lateral boring will be made to the curb line and the work will be done without disturbing the pavement of the street. There are many advantages to be found in such a system, but the first cost would probably be heavy. In the long run the system might prove the more economical because of the saving to pavements.

Some months ago, at a meeting of the heads of Buffalo municipal departments, Mayor Jewett suggested the idea of buying all office supplies by the contract system. A committee was appointed to receive bids and a contract was subsequently awarded. As a result of this system the city is now getting its stationery and office supplies at prices 25 per cent. lower than the prices heretofore paid. This is only one of a hundred ways in which city officials may save money for the taxpayers.

R. L. Gorman, J. C. Quinby, R. N. Hare and William Banholzer are again the board of public works of St. Paul, and John Copeland loses his place as commissioner of public works. At the last session of the Minnesota legislature a law was passed by which the common council of St. Paul was given the power to abolish the board of public works and substitute a single commissioner. The republican council which went into office last June lost no time in voting the democratic board of public works out of office. Now the law under which they acted has been declared class legislation and unconstitutional, and the old board goes back into office.

Hereafter Mayor Strong proposes to have weekly conferences with the heads of all departments in which the commissioners have been appointed by himself. The head of each department will be required to submit a report of the operations of his department at the weekly conference. This is an excellent idea, as it enables the mayor to keep in close touch with all departments, and also affords an opportunity for the proper discussion of questions arising in the administration of municipal affairs.

—Free transfers have received a setback in Providence by a recent vote of the common council of that city. The council voted to indefinitely postpone action upon the question of accepting a special act of the legislature providing for a system of transfers, by means of transfer stations, for the patrons of the Union Railroad Company. The council advocated a system of transfer tickets which the company claimed would lead to grave frauds, and as no agreement could be reached, the matter is shelved for a long time to come.

A REPORT ON MUNICIPAL LIGHTING

To the Honorable City Council of the City of Des Moines, Iowa.

Gentlemen: Pursuant to your resolution of Aug. 17, 1896, authorizing the mayor to communicate with various manufacturers of appliances for electric lighting to secure information as to the advisablity of the city establishing a municipal electric lighting plant, I beg to report that I mailed the following letter to various firms:

Gentlemen:—I am authorized by the city council of the city of Des Moines to correspond with various firms manufacturing electric light machinery to ascertain the probable cost of equipping a plant in Des Moines for the purpose of lighting our streets, etc., and possibly furnishing private consumers. Our last appropriation for lighting our streets and public buildings amounted to $50,000, and we find that the expenditures for the year will amount to about $52,500. For this amount we operate 167 arc lights, moonlight schedule, 121 arc lights on all night schedule, 938 gasoline lamps, 17 incandescent lamps, 318 gas lamps; also gas for city hall, etc.

We would also ask your opinion as to whether the city could maintain and operate an independent plant, the capacity of which would be sufficient to furnish lights as above stated, at a cost that would reduce the amount expended at present for such service. Any information in detail that you can give will be appreciated,

I have received answers from the following named firms: General Electric Co., Westinghouse Electric & Mfg. Co., Royal Electric Co., Bryan & Humphry, consulting engineers, Brush Electric Co., Chas. F. Loweth, consulting engineer, Excelsior Electric Co., and a large number of other engineers and manufacturers. I also beg to submit the report of Assistant City Engineer Schreiner, who, at my request, estimated the value of the Fort Wayne electric light plant now in operation in our city; also a report of experts appointed by the city council of Springfield to report on the result of the first year's experience in municipal electric lighting by the city, which I consider very valuable for the reason that it seems to to cover the ground thoroughly, and shows the actual experience of that city.

I beg to submit the summary of the results of the information received as I view it. I find the letters from Engineer Loweth and the Royal Electric Co. report encouragingly, and believe that the city could save money by establishing a municipal plant. The Edison Electric Light Co. and the Ft. Wayne Electric Light Co. did not answer my letter at all, and the General Electric Co. and the Brush Electric Co. advise against the enterprise. The following extract from the letter of Consulting Engineers Bryan & Humphry expresses the conclusion that I have drawn from my investigation. "There are two sources from which such information is frequently asked: First—from manufacturers of appliances, who either desire to sell you the machinery, or may have friends in the business to protect, and in either case are unlikely to give you unbiassed information. If you seek such information from parties already operating plants, it is frequently the case that the conditions are so different that their experience is of little value, and sometimes actually misleading."

The following letter from Chas. F. Loweth is of considerable value and I quote the same in full:

Dear Sir:—On my return from several days' absence I find yours of the 20th. Also the report of the superintendent of street lighting, and the city map, both of which I have looked over with much interest. I am surprised at the very large amount of expense for street lighting, viz., $52,500, and speaking off-hand, think that you ought to get this service for less expense, either by new contracts with present companies or by the establishment of a municipal lighting plant.

It would probably not be economical to provide an electric plant which would cover the entire areas now lighted. Probably the gasoline lamps in the outskirts could best be maintained for the present, and replaced with electric lights from time to time in the future; especially would this be true if you could make a contract for gasoline lighting, or purchase the present gasoline plant at fair terms, and above all, if the funds available for lighting should be limited.

My impression would be that a great deal of the residence portion of the city could better and more economically be lighted with incandescent street lamps. I have advocated this for several years and tried it in several places with considerable satisfaction, both to myself and the citizens. Briefly, the argument is that for the business portions of the city, a brilliant illumination is desired, and can be obtained by placing the lamps close together, and the absence of shade trees prevents shadows. For the residence portion of the city incandescent lamps can be placed close together, say two at a street intersection and one midway, more or less as the importance of the street may justify, and while the light is not so bright it is much better distributed, and shadows from shade trees are largely obviated, producing on the whole a more efficient and better distributed and more practical illumination.

Incandescent lamps can be of high candle-power; varying from 30 to 50 C. P.; and can be placed at street corners or suspended over the centre of the street as desired, and at such elevation for each particular locality as will produce the best result. Generally, six or eight of these will be equal in current to one arc lamp and, distributed along two blocks of street, would light the street much more satisfactorily than one arc lamp at every crossing, which makes a brilliant and almost dazzling illumination at one crossing, while a block away the shadows may be very intense. The incandescents will cost much less to maintain, both in the way of carbons and attendance.

I take it from Mr. Barnett's report that your contract for lamps is made for two years, and expires next February. You cannot, of course, expect any competition except from existing companies, unless a contract can be made for a term of years, probably not less than ten years, with some provision for extension or purchase. This results, as in the majority of cases, in permitting the company first in the field to get pretty much such rates as it desires, knowing that no new company can enter the field for so short a period as two years, or short term contract.

I believe that the domestic use of electricity for lighting and other purposes is in the larger cities far behind that in many of the smaller cities or towns. In most of the large cities the residence districts are not provided with electric lighting circuits and I believe, if they were, the electric light would supplant much of the gas lighting, and be used for other purposes than lighting. This is true in many of the smaller towns, and would be more so in the larger ones if opportunity occurred. The gist of this is that if you could make a long term contract you could probably make it an inducement for another company to enter the field, perhaps two or more, each covering a portion of the city, and having a contract from the city for the street lighting of that portion and the privilege of selling domestic lights, etc., over the same areas. I appreciate the difficulties of making a franchise which will obviate the litigation that has been so common with water-works franchises, but think that it could be done, and, if it cannot, I see no other alternative than the building of a municipal plant.

Briefly, the point is this: If the city contracts for its lighting in order to get fair and reasonable rates, as determined by competition, the contract must cover a long term of years, with provisions for either continuation or purchase of the plant, in order to justify a new company entering the field. If such franchise or long term contract is deemed unwise, the only alternative would probably be the construction of a municipal plant, which might be best in any event.

My impression is that you could do your city lighting in a thoroughly satisfactory manner and at less expense (operation, interest on investment, etc.) than what it now costs by contract. This could only be determined by a very thorough study of the entire matter, and careful estimates of the expense of a municipal plant would necessarily take some time. I should be glad to undertake such estimate for you. I do not understand that your letter warrants me in doing this. You can hardly determine the matter intelligently until you have such estimate made, and if made, aud the city concludes not to build its own plant, the expenditure would not be lost, as the cost of the plant sufficient for the purpose must necessarily, to a greater or less extent, determine the fair and reasonable price to be paid a private company for the same service. Trusting that I may be of service in the matter, I remain,

Yours very truly,

CHAS. F. LOWETH.

The Westinghouse Electric Co. answered my letter and asked for a plat of the city showing the territory which we desired to cover. I had the city engineer prepare such a plat and the same was forwarded several weeks ago, and my delay in making this report was due to the fact that I waited for their report, expecting it to be of considerable value in this investigation. They have, however, failed to make the report promised, and have also failed to acknowledge receipt of three or four stamped letters since mailed them; in some of the letters I enclosed stamped and addressed envelopes for reply, urging them to submit their report.

I quote the following from the letters of the General Electric Co., which appears to be a strong argument against municipal ownership. They quote no instance of any city having made a success in their attempts to light the city from a municipal plant.

As the number of lamps required by Des Moines would be only about one-third the number in operation in Detroit, the cost per lamp would be greater than in Detroit, and would be in the neighborhood of $500 per lamp, which for 542 lamps would be $271,000. I should not be at all surprised to have the figure reach $350,000.

As to the cost of operation, the report by the city of Chicago, published about a year ago, showed that the expense of operating each arc lamp was $95.65. To this should be added interest on investment, depreciation, insurance, taxes, water, etc., which would readily bring the price up to about $160 per year.

I understand that the price in Des Moines is $99 per lamp per annum. If this is the case, it is absolutely hopeless for your city to undertake to reduce the price by putting in a plant

and operating it on its own account. There are plenty of consulting engineers seeking employment who can figure out that the lights will cost you $50 per lamp per annum, but such results cannot be secured either at Detroit or Chicago, and these two plants are the crack municipal plants of the country.

I send you the above information from a disinterested standpoint entirely. If your city determines to put in a plant we shall be very glad, indeed, to bid on the electric machinery and shall try and secure the work. We shall be glad to furnish you any additional information that we have on the subject. Our deliberate judgment is, however, that it will be very much cheaper, and more satisfactory to your city, to patronize some one of the local companies now doing business in your city for such electric lighting as it may require.

The board of public works of St. Paul, Minn., have investigated the subject of municipal lighting, and have come to the conclusion that it would not be advisable to establish a municipal plant, but rather light the city's streets by contract. The Brainard (Minn.) municipal plant was a distinct failure, and has been turned over to a private company. The experience of other cities, even those much larger than Des Moines, has been that the cost of street lighting has been greater when carried on directly by municipalities than when furnished by some private corporation and paid for at a fixed rate per annum. The reasons for this are many. One important thing is the local companies can afford to make low rates because of their income derived from private lighting.

The following is from the Brush Electric Company's letter:

Gentlemen:—Your favor of the 6th is received. We have had a wide experience in selling apparatus to local electric companies furnishing lights to cities and also to the municipal authorities themselves. Our experience is that there is a little to much local politics connected with the cities of this country to insure the best operation of a municipal plant. If you want some knowledge on this subject suppose you write to the city of Moline, Ill. They were one of the first to try it and one of the first to give it up. The city of Bangor, Maine, put in a plant—a first-class plant—but the apparatus has never been particularly well kept up.

Personally, I think that a city in this country had much better devote the money which they have appropriated for buying an electric plant, to the purpose of paving their streets. Paving streets is something which you cannot buy from local companies. Other improvements which you cannot buy from local companies are more valuable to a city than an electric light plant.

Adopting the suggestion of the Brush Electric Company, I wrote to the mayor of Moline, and quote the following from his reply:

Dear Sir: In reply to your communication of the 10th regarding electric light plant, I beg to say that this city ran its own plant for a number of years as an experiment, It was operated in connection with the water-works, which made it difficult to ascertain the exact expense, and as the plant was not a modern one and had not been taken care of in a proper manner, it was considered by our council that the expense would be too heavy to reconstruct the plant. It was therefore recommended to enter into a five-year contract with the Moline Light and Power Company, which offered $7,500 for the old plant, to apply on the first year's lighting. We pay $84 per arc light, 2,000 c.p., moonlight schedule, for 126 lamps; while the power company here offered to supply Davenport, from their Moline plant, at the rate of $56 per lamp.

I gathered statistics last year, and from information obtained came to the conclusion that any city where fuel can be secured at a reasonable price, or where they have advantage of water-power, can reduce the price to about $50 per light.

The following letter is from the Royal Electric Co.:

Dear Sir: We have your esteemed favor of Aug. 21, and in reply to the same would say that you would require, roughly speaking, three arc-light dynamos of 100 lights capacity each, with lamps, and a 1,500 alternating current dynamo, inclusive of transformer and lamp capacity. To operate this economically you will require 450 to 500 horse-power, in steam and boiler capacity, inclusive of accessories, such as water pumps and steam separator, etc.

We cannot approximate any figure regarding the cost of pole line and material, and therefore give a general figure which may be of service to you. We estimate the cost of such a plant as you would require, with machinery up to date, central station building and boiler house, to reach the figure of $45,000 to $50,000. This includes, of course, mounting of machinery and sending experts to the place to operate it for a certain time, to satisfy the proper operation of the same. After such a plant is once installed you would, of course, have simply running expenses, such as salaries, fuel and material for the maintenance of the plant. The cost of fuel in your city, to a great extent, determines the cost of operation of the plant. It depends, further, to a greater extent, on the management of such a plant, and whether the coal dealers and other people supplying the station with material, such as oil, waste, etc., are standing with the purchasing agent, or, better, with a man whose advice is asked for to decide the material best suited for the purpose. It happens only too frequently that a dealer, to secure a good contract from the city, will compensate the party who advocates their material, at the expense of the city.

The figures we have given are for a 1,500-light alternating current dynamo, which distribution system is most economical when the lights are scattered, as it seems to be in your street lighting. Hoping that this information will be what you desire, we beg to remain,

Very truly yours,

ROYAL ELECTRIC CO,

By referring to the extracts from a report of a committee investigating the results of the municipal lighting plant of Springfield, Ill., submitted herewith, you will note that the actual experience of Springfield is a direct contradiction to the theory set forth by the General Electric Company, that a private company can operate cheaper than a municipal company because of their income from their private consumers.

Letters from the Royal Electric Company, the Excelsior Electric Company and the J. B. Allfree Manufacturing Company show that they are willing to consider a proposition to establish a municipal plant for Des Moines, the cost of same to be paid out of the electric lighting fund usually appropriated by the city.

It is my opinion that it would be profitable for the city to establish a system of municipal lighting to supply the present territory now lighted by electricity, and from time to time add to the system as may be deemed profitable.

Respectfully submitted,

JOHN MACVICAR, Mayor.

—The council at Egg Harbor City, Pa., has decided to put in a water-works system.

INTERNATIONAL ASSOCIATION OF FIRE AND POLICE TELEGRAPH SUPERINTENDENTS.

One of the most important and intricate departments of all large cities is the fire and police telegraph bureau. On September 15, at the Clarendon Hotel, Brooklyn, a meeting was held which was attended by a number of the superintendents of the fire and police telegraph service of many of the large cities, who decided to organize themselves into an association to be known as the International Association of Fire and Police Telegraph Superintendents, for the purpose of acquiring scientific, statistical and experimental knowledge relating to the construction, equipment and operation of fire and police telegraphic systems, and the diffusion of this knowledge among the members of the association with the view of improving the service, and, if possible, reduce its cost; also to promote the spirit of fraternity and the exchange of ideas and opinions.

The organization was effected and today this association is in practical operation and doing splendid work. It has received the hearty indorsement of various city officials all over the country, who realize the necessity of improved service in many places in this particular line, and already much good has been accomplished. An annual meeting of the members will be held, at which time will be presented important papers and addresses on topics of the greatest interest.

The president of the association is Frank C. Mason, superintendent of the police telegraph bureau of Brooklyn. Mr. Mason is an old time telegrapher, having been in the service since his youth, and held several responsible positions with the large telegraph companies before he entered the service of the city nearly thirteen years ago. Under his able management Brooklyn has acquired a telegraph service second to none, and his thorough knowledge and practical ideas of the requirements of his department enable him to maintain it to the greatest degree of efficiency.

Morris W. Mead, the vice-president, is also an "Old-Timer," and at present is at the head of the electrical division of the department of public safety of the city of Pittsburgh, which city also justly claims to have a thoroughly equipped and a most satisfactorily conducted electrical department. Mr. Mead has, in addition to the regular police and fire telegraph service, a supervision of all matters electrical throughout the city.

The secretary is L. Lemon, superintendent of telegraph in the city of Baltimore, and the treasurer is Adam Bosch, superintendent of fire telegraph of Newark, N. J.

The executive committee consists of J. P. Barrett, Chicago; S. L. Wheeler, Springfield, Mass.; J. F. Zeluff, Paterson, N.J.; W.Y. Ellett, Elmira, N.Y., and W. C. Smith, New Haven, Conn.

The membership of the association is divided into two classes, active and associate, the former being persons in charge of municipal telegraph systems and the latter of those connected with the service or interested in the manufacture of fire and police apparatus and appliances. Associate members have no vote and cannot hold office.

The annual dues are not prohibitory, being but five dollars per year, and it will, doubtless, be but a short time before the name of every progressive man in the telegraph service of municipalities will be enrolled on the books of the association.

One of the pleasant features of the first meeting was the presence of a number of the city officials, who cordially welcomed the delegates and applauded their efforts to form an association that would certainly result to the general good of all concerned. After the regular business of the first day was concluded the members and invited guests were escorted to the Long Island Railroad depot, where a special car was in waiting to convey them to Rockaway Beach, where an enjoyable entertainment was provided at Alderman Sam. Myers' hotel. After the second days' proceedings they sailed around Staten Island.

FIRE AND POLICE.

—As the result of a conference between Director J. O. Brown, of the department of public safety, and Superintendent of Police A. H. Leslie, of Pittsburg, pistol ranges are to be established at once for the benefit of the policemen and firemen, where they can be initiated into the manner of performing the feat of aiming at a mark and hitting it at forty rods with a big revolver without danger of putting a bullet through something else.

—The matter of establishing a fire-alarm system is being agitated at Dunkirk, N. Y.

—L. E. Irwin, chief of police of Kansas City, Mo., died November 27. Mr. Irwin was appointed chief in May, 1895, and administered the affairs of his office with remarkable ability.

—An electric fire-alarm system has been instituted at Fulton, N. Y.

—Pittsburg officials have authorized Director of Public Safety J. O. Brown to appoint fifty more policemen—ten at once and forty in February.

—The police committee of Philadelphia councils has decided to recommend the following increases of salaries in the police department: Superintendent, from $4,500 to $5,000 a year; police surgeon, $1,800 to $2,000; captains, $1,800 to $2,200; lieutenants, $1,400 to $1,600; telegraph sergeants, $1,000 to $1,100; patrol sergeants, $1,000 to $1,200. The committee recommends that patrolmen be paid $2.75 a day and that 200 be added to the present force.

—The Columbus (O.) fire department is composed of one superintendent, $166.66; one assistant superintendent, $100; one superintendent of telegraph, $100; one superintendent of machinery, $100; one surgeon, $25; three operators, each, $60; 14 captains, each, $85; 15 lieutenants, each, $80; 8 engineers, each, $85; 9 assistant engineers, each, $75; 61 firemen, each, $75. Total, 115 employees.

—The police department of Columbus, O., comprises one superintendent, $166.66; one assistant superintendent, $125; seven detectives, each, $90; one detective, $75; six sergeants, each, $90; one surgeon, $75; 75 patrolmen, eaeh, $75; eight wagon men, each, $75; four ambulance men, each, $75; 20 substitutes, each, $65; three operators, each, $60; two turnkeys, each, $75; two engineers, each, $75; one matron, $50; one matron, $40; two janitors, each, $50. Total, 135 employees.

PITTSBURG'S PUBLIC SAFETY BUILDING.

The new Public Safety Building, erected on Sixth avenue, Pittsburg, at a cost of $180,000, will be ready for occupancy by Jan. 1. The building, which was designed by Director J. O. Brown, is a model of its kind, and a description will be of interest to city officials throughout the country.

The first two floors are to be occupied for the police bureau, with the exception of the front room of the second floor, which has been set aside for the building inspector's office. The first floor will be occupied by the inspector of police, the detectives and the police court. The prison adjoins the police court room, and is regarded by all who have examined it as one of the best designed and best constructed prisons in the world. It contains 60 iron cells for men, which are arranged in three tiers or ranges, one above another. The cells for women are in another part of the building. The lockup is so arranged that a woman, when arrested, does not see a man from the time she enters until released. There are seven cells of iron for intoxicated and what are known to the police as "tough women," and in another department, so far removed that not even a sound can be heard, are quarters for the detention of runaway girls and cases which demand less harsh treatment than is accorded to the hardened criminal woman. These rooms will be completed and have in them a little furniture to make them look different from the ordinary cells. In still another part of the lockup will be a department for unruly boys, which will be removed from the quarters of both the men and the women. There will also be three nicely finished rooms for hospital purposes for women and a like number for men.

The department will make its own photographs of criminals, when it is moved to the new building, and a gallery for that purpose is being fitted up under the skylight, which covers the cell tiers. Near the entrance to the lockup is a padded cell for insane persons. The patrol wagon comes into the building, landing the prisoners right at the door to the cell department. The police surgeon has been provided with rooms near the hospital, where he will make his headquarters night and day. The police court room is a great improvement on those at the stations throughout the city. Adjoining it are rooms for stolen goods. The office of the police magistrate who presides at Central station will be located above the court room. The magistrate will make his headquarters here all the time.

In the basement of the building will be the machinery —engines for running elevators, electric light plant, etc. There will also be sleeping accommodations in the basement for a few emergency policemen. The electric light plant will be most complete. The dynamos will also be used for charging the storage batteries to be used in the fire-alarm office.

The entire third floor will be occupied by the Bureau of Health and the Bureau of Plumbing and House Drainage, with rooms for the sanitary police, milk, food and vegetable inspectors and chief sanitary inpector. The division of bacteriology will have convenient and suitable quarters for the laboratory and developing rooms and chemical testing rooms. Sleeping rooms are provided for the doctor in charge of the bacteriological department and the fire aud police surgeons.

The fourth floor will be occupied by the Bureau of Fire and the Bureau of Electricity. The general offices of the Burean of Fire will be in the front of the building, with Chief Engineer Miles Humphreys immediately in the

rear. Chief Humphreys will make his home here, his sleeping rooms connecting with his office.

The most interesting part of the building is the fire-alarm office. It is 23 feet high, giving ample room for the fire-alarm service. The general offices of the Department of Public Safety are on the fifth floor. The chief clerk and assistants will occupy the front rooms and immediately behind them will be the headquarters of Director J. O. Brown. In the rear of the building on the fifth floor is a large room in which the Public Safety committee, the police boards and the detective force will meet.

LIGHT AND WATER.

—City Engineer Farnham, of Camden, N. J., has been instructed by the council to prepare an estimate of the cost of erecting an electric light plant.

—The borough council of Merchantville, Pa., is considering a proposition to establish an electric light plant.

—The Tarrytown, N. Y., board of water commissioners will build a $100,000 reservoir at East View.

—The collections of the Brooklyn water registrar's bureau for the eleven months ending Nov. 30 amounted to $1,734,373.38, an increase of $55,316.70 over the same period of 1895.

—The $3,000,000 filtration loan bill has passed the select council of Philadelphia.

—The Manufacturers' Association of Brooklyn has appointed a committee to investigate the city water supply and schemes for its extension aud purification.

—The annual report of the board of public works of Louisville says that city is now lighted with 1,207 arc lights of 2,000 candle-power each in the city, 84 gas lights and 1,007 gasoline lights. The board claims that the city is more thoroughly lighted than ever before. An appropriation of $145,545.71 is asked for electric and gas lighting for the coming year, as compared with the sum of $102,855.48 for this year. The present contract for electric lighting expires on June 1, 1897.

—Supt. Hill, of the Syracuse, N. Y., Water-works, laid 6.6 miles of water mains during the fall, making a total of 138.8 miles in the city. During the year seventy hydrants were put in, making a total of 2,143.

—Worcester gets its electric light at a lower rate than any other New Englan Although the Heart of the Commonwealth is nearly fifty miles inland, and the cost of coal is greater than in seaboard cities, like Boston, Providence, Lynn, Fall River and New Bedford, the rate per light per night is lower than in any other place where lights of the same candle-power as those in Worcester are used. Worcester lights are of 2,000 candle-power. There are a few places where 1,200 candle-power lights are burned, on what is called a moon schedule—all night only on those nights when the moon is not down to shine—that the rate per light per night is lower than in this city. The rate for Worcester is only thirty-three cents per light per night, and the new contract was made during the present year.

—The question of water filtration is being considered by the board of health and council of Ridgway, Pa.

—The Omaha council has made a five-year contract with the Thompson-Houston Electric Light Co. of that city, for street lighting. The new contract begins on Jan. 1, 1898, and provides for at least 200 arc lights of 2,000 candle-power with a current of 9.6 amperes operated with a force of fifty volts. The price per lamp per annum is $114.50, a reduction of $5.50 per lamp from the rate in force. As an additional inducement the company is to reduce the present price to the rate named in the new contract during 1897 and furnish free light for the city hall to the extent of $1,000 per year. There are now 222 lights in use. This would indicate a saving of $1,221 per year on the street lights and $1,000 additional on the city hall, a total of $13,326 during the next six years, or about eight per cent. on the present expenditure.

MUNICIPAL PLANT FOR MILWAUKEE.

Milwaukee is likely to embark in the municipal lighting business. The matter has been agitated in that city for several years, and the common council committee on street lights has finally reported in favor of a particular tract of land, located on the North Menominee canal, near the western city limits, as a site for the plant. The price of the land is $18,000, but the expense of docking, dredging and otherwise improving it will bring its total cost up to $32,000. The city has set aside the amounts received as premiums upon the sale of its bonds, during the present year, to the beginning of work upon the municipal lighting plant, and the expense of the site will be paid out of this fund. There was some question as to whether the common council had a right to make such a use of the premiums on city bonds, as all the ordinances under which the bonds are issued provide that the proceeds shall be devoted to no other purposes than those specified in the ordinances; but the city attorney decided that premiums were not "proceeds" within the meaning of the ordinances.

The city's lighting contract with the Milwaukee Electric Railway and Lighting Company does not expire until December, 1900, and the city is therefore in no hurry to build a power house; but it is desired to locate the site for the plant without delay, so as to permit the starting of work on the construction of the main conduits. The idea is to lay conduits as soon as possible in streets where permanent pavement is to be laid or the temporary pavement renewed, thus avoiding the expense of tearing up new pavement in order to lay the conduits. It is proposed to build a plant capable of furnishing at least 1,000 arc lamps for lighting the streets, and the lowest estimate of the cost of the improvement is $345,000. Before the bulk of the work is started it will, of course, be necessary for the city to issue bonds.

JERSEY CITY'S WATER SCHEME.

The street and water board of Jersey City has awarded a contract to the East Jersey Water Co. for the construction of a new water plant, the supply to be derived from the headquarters of the Rockaway River, some distance from the city. The price at which the plant is to be sold to the city when it is completed, and the city is ready to buy it, is $6,955,000. If bonds can be sold at four per cent. this will involve an annual interest charge of $278,200. If the city uses 25,000,000 gallons daily, which is the estimated consumption at present, the annual cost will be about $394,200. The award of the contract to the East Jersey Water Co. must be concurred in by the finance board and approved by the mayor before it is settled.

TAXES AND FINANCE.

—The tax levy rate per cent. of St. Paul for 1896, recently fixed by the common council, will average about fourteen mills in the several districts. This is one and one-tenth mills higher than for 1895, but with a reduction of twenty-four per cent. in valuation of real and personal property, and thirty per cent. in all expenditures, it will very considerably reduce the number of dollars the taxpayer will have to give up next spring. The assessed valuation of the city for the year 1895 was $122,643,703. The county board of equalization reduced the valuation for the year 1896 to $93,652,927.00, or nearly twenty-four per cent. This would naturally raise the tax levy rate per cent. very considerably, and would do so but for the fact that for all operating expenses, including interest and maturing paper, the affairs of the city have been so conducted that it requires $580,991.00 less to cover all such expenses in 1896 than for 1895. There was placed on the tax roll for 1895, $1,901,426.00, and for 1896, $1,320,435.00, a reduction of over 30 per cent. On October 1, 1896, the city owed $435,077.00 less than it did on the first day of the present year.

—The report of the auditor of the city of Boston, dated December 1, 1896, shows that there has been issued $7,321,000 of funded debt since January 1. The gross debt November 30 was $69,519,074.64, and the net debt $43,774,548.75, as against $63,381,614.93 and 38,413,-814.23, respectively a year ago. The gross debt was increased $2,037,500 during the month of November last, while the net debt was increased only $613,143.58 during the same month. There has been $2,315,306.13 of the funded debt paid thus far this year, as against $386,746.63 in the corresponding time last year. The total means of redemption November 30, 1896, were $25,744,525.89, an increase during that month of $1,424,356.42. The present borrowing capacity inside of debt limit is $107,211.81. A year ago it was $467,124.97.

—For the first time in the history of the city, Atlanta, Ga., four per cent. bonds have sold above par. The Lowry Banking Co. recently purchased $74,000 of these bonds at 100.625.

—Baltimore 3½ per cent. general improvement bonds to the amount of $500,000 were sold recently to the Maryland Trust Co. at 105.23.

—The salary of the mayor of Somerville, Mass., has been increased from $1,000 to $2,500 a year.

—Alderman Chandler, of Somerville, Mass., has introduced an order to cease insuring municipal buildings. "There are forty-two public buildings in Somerville," he says, "valued at $1,113,200, and insured for $582,550. To insure them up to the eighty per cent. standard would require $333,960 more in policies, which would cost at once $5,009.40 The annual cost of insurance to the city is now $1,747; if the whole property was insured for eighty per cent., the annual cost would be $2,671. Against this it may be said that the amount of insurance collected by the city for fires in public buildings in the last eleven years has been only $5,655.09. The total expense of insuring for that time at the present figures would be $19,217. If insured for eighty per cent., the cost for eleven years would be $29,388.48."

—The new tax budget for Jacksonville, Fla., amounts to $198,971, and the rate for all purposes will be 13.95 mills. Last year the tax rate was 15.8 mills.

—Under suspension of the rules, the Milwaukee aldermen have passed an ordinance imposing a license of $20 upon transient peddlers who do business in that city. The step was taken at the behest of the home merchants, who represented that their business was suffering as a result of the competition from the peddlers. The penalty for violation of the ordinance is a fine of from $50 to $100 for each day that a peddler does business in Milwaukee without a license.

—A decision of general interest to city officials has been rendered by a Milwaukee court. A contractor named Patrick Shea transferred his claim for city work to one Henry Herman, his financial backer, but Shea called at the city hall and was given an order for about $100. The deputy city clerk who gave him the order was not aware, it seems, that Herman held a power of attorney from Shea, and it also appears that Shea did not call for the order, but simply accepted it when it was given to him. Herman sued the city and the court directed the jury to return a verdict in his favor. Thus the city has had to pay the amount twice.

—Fall River, Mass., sewer bonds to the amount of $35,000 were sold recently to R. B. Day & Co. at 109.837.

—City Treasurer Stokes, of Trenton, N. J., offered $70,000 of four per cent. city bonds for sale before the election and the highest bid received was one per cent. premium. Mr. Stokes, who, by the way, is a republican, refused this bid, and, at the same time, told the financiers that after the election of McKinley they would be glad to get the bonds at five per cent. premium. On November 27 the bonds were sold to E. C. Stanwood, of Boston, at 5¾ per cent. premium.

ALBANY'S NEW TAX BUDGET.

The tax budget for Albany, N. Y., for 1897 has been fixed as follows:

Interest on city debt	$110,400 00
Redemption of bonds	48,000 00
Trustees general debt sinking fund	35,000 00
Trustees Washington Park sinking fund	22,000 00
Chamberlain's assessment sale	13,401 90
Board of Health	9,700 00
Salaries of city officers	60,400 00
Fire Department	143,403 07
Board of Public Instruction	202,932 38
Street department	28,800 00
Street sweeping department	32,923 00
Removal of dead animals	300 00
Electric lighting	88,505 00
City assessors	242 14
Commissioners, Washington Park	29,766 70
Printing and advertising	12,000 00

Elections	25,000 00
Police department	158,320 00
Civil Service Commissioners	1,000 00
Expenses Corporation Clerk's office	1,000 00
Additional clerks, tax department	1,000 00
Police court	5,418 00
City court	6,000 00
Public celebrations	4,000 00
Stationery	2,000 00
Examining Board Plumbers	600 00
City poor	13,000 00
City engineer	505 00
South End library	950 00
City Building	5,661 00
City Hall	6,850 00
Assessments city property	6,251 49
Legislative centennial	5,000 00
Hospitals	23,000 00
Total	$1,103,332 06
Less amount to be appropriated from contingent fund	64,285 49
Total amount to be raised by tax	$1,039,046 57
The budget for 1896	942,386 32
Increase for 1897	$96,660 25

There is an increase of $23,000 in the fire department fund, including the salaries of thirty-four additional members; an increase of $22,500 in the street cleaning department, to provide for the purchase of two new street sweeping machines, two push-carts and two sprinklers, and for the services of the men to operate them; an increase of $5,000 in the police department, for an extension of the signal service.

SCHOOLS AND LIBRARIES.

—President Wilson, of the New York board of health, believes that the public schools are the great breeding places for contagious diseases and he has asked the board of estimate to authorize the employment of 110 inspectors at a monthly salary of $30, and a chief inspector at a yearly salary of $2,500, to visit the schools and take such precautions against the spread of the diseases as might in their opinion seem advisable. These doctors, President Wilson says, would diagnose the case of every pupil who showed any trace of illness, and if he or she should show any symptom of a contagious malady, precautions would be taken at once against its spreading.

—The school committee of Philadelphia councils recommends that the board of education be allowed $3,300,000 for permanent improvements for next year.

—Supt. Siefert, of the Milwaukee public schools, has issued an order prohibiting the agents of publishing houses from attending committee meetings and visiting the offices of the school board.

—The Milwaukee school board has changed the method of paying teachers from the calendar-month system to a basis of one month's pay for forty half days. The only material effect of the change is greatly to simplify the work connected with paying the salaries.

—President Lindemann, of the Milwaukee school board, has inaugurated a campaign in the interest of the lower grades. It is his plan to increase the salaries of the teachers of the lower grades so as to keep them at work in those grades, instead of inducing them, as at present, to seek higher grades in order to get better salaries. He would make the salaries of primary teachers as high as $100 a month. The present system is working great harm to the children, he declares, and he cites instances of children being kept in the primary grades for three years as showing the need of reform.

—The library at Buffalo, N. Y., which has been operated on the subscription plan, will be made a free public institution on January 1. The library consists of 83,000 volumes.

—Residents of Forestport, Oneida County, N. Y., felt that the one thing above all others needed just at present in that village was a public library. They did not wait for some wealthy citizen to die and leave an endowment fund. Forestport residents are not built that way. A paper was circulated and considerable money was pledged. Those who could not afford to give cash offered to work gratis. A two-story building has been erected on a convenient location and is now complete. It has been liberally stocked and is receiving the patronage to be expected from such an enterprising class of inhabitants.

—Miss Victorine Artz has given $10,000 to the Boston public library for a Longfellow memorial fund.

PUBLIC LIBRARY FOR BROOKLYN.

It looks as though Brooklyn is to have a free public library at last. At a meeting of the council, Nov. 30, the following resolution was unanimously adopted:

Resolved, That this common council does hereby determine that a public library and reading room shall be established and maintained in the city of Brooklyn under the provisions of chapter 441 of the laws of 1892 of the State of New York.

The law provides for the appointment by the mayor of nine directors, who, with the mayor, the president of the board of aldermen, the president of the board of education and the director of the Brooklyn Institute, shall have charge of the establishment and maintenance of the public library. Mayor Wurster has approved the council's resolution and announced that he will soon appoint the library directors.

THE LIBRARY AND THE SCHOOL.

Is there not a suggestion as to one large province of library work in the fact that the large majority of children leave the school before they have reached the eighth grade? May it not be possible to bring the schools and the public library into such a close relation that for these children the library may be the means of continuing the educative work begun in the schools? If some such co-operation cannot be brought about our whole educational system would seem to be top-heavy and to fail of the appointed end. Theoretically, the community taxes itself for the education of the mass of the people, on the ground that free popular institutions can be possible only

in an intelligent and educated community. Practically it results, under present conditions, in the mass of boys and girls—especially boys—not getting much school education, while a by no means inconsiderable part of the whole amount raised for school purposes is used for the support of high schools, manual training schools, college and technical schools, in which some of the poorer classes may, it is true, find higher education, but which are patronized largely by students from the more favorably circumstanced families who could well afford to pay for such special privileges. Such institutions would certainly be established in every educated and intelligent community, by private endowment if in no other way. But to secure the end of general education it may be questioned whether we ought not to give greater attention in some way to prolonging the years given to study by the masses of our children; and if the necessities of family support in the great majority of the families in any community, even the most highly developed, demand that children shall leave school at such an early age, can we not in some way keep hold of those children, and in some degree, at least, continue their mental and moral development?

The public library would seem to offer such a means. After a child leaves school he is educated further in two ways—by contact with men and the facts of life, and by what he reads. Now the public library stands ready to welcome the child with the best books on every subject, to put before him what the wisest men in every department of human knowledge have said. But the child does not come—at least, the greatest number of those who ought do not come. The public libraries are patronized by the educated and fairly well-to-do classes of children, but the boys and girls from the poorer classes do not come en masse, as they should. Why? Because the schools and the teachers have not grasped the situation and seen so clearly as they ought, that the very best thing, next to certain habits of moral conduct the schools can give a child, is a fondness for good books. There is no desire to depreciate the benefit of sound training in arithmetic, geography, grammar, drawing or anything else that the schools may see fit to teach, but with all deliberation let it be said that when we take into account the far-reaching influences all through life, of a taste for good reading, our schools can do nothing whatever for a child so important, aside from moral training, as to train him in such a way that he will leave the school with an overmastering desire to read good books. —John Parsons in Public Libraries.

PHILADELPHIA GARBAGE CONTRACTS.

The contracts for the collection and disposal of garbage in Philadelphia for the year 1897 have been awarded by Director of Public Works Thompson. The city is divided into five districts for this work. The American Incinerating Co., using the Arnold system of reduction, secured the contract for the first three districts, their lump bid being $147,500. The contracts for the fourth and fifth districts went to the Philadelphia Incinerating Co. using the Smith-Siemens furnace system, at $89,800 and $85,400, respectively. It will therefore cost the city of Philadelphia $322,700 for the collection and disposal of garbage in 1897. This is an increase of $33,700 over the contract figures of 1896.

NOTES OF THE TRADE.

—The following persons comprise the present board of directors of the Gleason & Bailey Manufacturing Company: E. P. Gleason. Wallace Drew, O. F. Gleason, W. C. Gleason, F. C. Beebe, J. C. Ryan.

—The J. W. Wilding Company has been incorporated at Fort Wayne, Ind., to manufacture a cement and paving material by James W. Wilding, Ella E. Wilding and Cordelia A. Wilding.

—The Street Sweeping and Loading Machine Company, 2,520 Bismarck street, St. Louis, Mo., has been organized to handle the patents owned by Henry Mueller, Jr., and to sell the Mueller street sweeping and loading machines.

—The Purington Paving Brick Company, Galesburg, Ill., is shipping large orders of brick to Peoria, Chicago, Beloit, East St. Louis and St. Paul. The brick sent to Peoria are being used for paving between the tracks, The contract with St. Louis calls for 1,500,000 brick. The company also has a big contract for furnishing brick for street paving at Macomb, Ill.

—C. G. Carlson, city clerk at Moline, Ill., says that the city has purchased one fifteen-ton Columbian steam road roller of the Aultman Company, Canton, O. Mr. Carlson says the roller has been received, set up, tried and accepted by the city, is now operated every day. and so far has proven successful.

—The Hancock Bridge Company, Hagerstown, Md., has elected the following directors and officers: President, J. F. Fields; secretary and treasurer, E. P. Cohill; directors, G. E. Ways, of Baltimore, and P. E. Dawson and Robert Bridges.

—The Galesburg Paving Brick Company, Galesburg, Ill., has the contract for furnishing brick for paving the county road at Monmouth, Ill.

—Chief Barrett, of the Indianapolis fire department, has recommended that two hose wagons and a chief's buggy be purchased. The board of safety directed the purchases to be made as soon as funds are available.

—The Hancock (Mich.) council talks of buying a snowplow,

—Chief A. J. Harris, of the Tampa (Fla.) fire department, and the council fire committee, are receiving bids for a large quantity of new fire hose.

—Savannah, Ga., has made a contract with the Warren-Scharf Asphalt Company for the maintenance of the asphalt streets for five years, at five cents per square yard per annum.

—At the recent election in Baltimore a loan was authorized for the construction of a municipal subway. The city council is expected to take up the work at once.

—The Chicopee (Mass.) board of health will probably recommend to the incoming city government some system for garbage collection and disposal.

—The Warren-Scharf Asphalt Company has the contract for paving South Broad street, Savannah, Ga., with asphalt.

—Messrs. J, H. and Robert B. McGowan, of the John H. McGowan Company, manufacturers of pumping machinery for all classes of service, Cincinnati, O., have just completed arrangements at Richmond, Va., for the extension of the company's business at that point. The company's branch house in Richmond will be moved into more commodious quarters in a modern building in the centre of the city, where the largely increasing trade can be better taken care of. In the new quarters the company will carry in stock a line of high-grade pump-

ing machinery of the types usually installed in water-works plants, and will extend its supply department in order to cater more fully to the supply trade. After January 1, 1897, it is the intention of the company to carry a large line of pipe, steam, gas, plumbers' supplies, etc.

—The Henry R. Worthington Company, New York, manufacturer of pumping machinery, has just received word through its London office that the exhibit of Worthington pumps at the Hungarian national exhibition at Budapest has been awarded a grand millennium medal. This medal is said to be the only award made for pumping machinery at the exhibition.

—At a meeting of the directors of the Westinghouse Electric and Manufacturing Company held in New York on December 2, the offices of general manager and assistant general manager were abolished. Mr. Lemuel Bannister was appointed first vice-president, in charge of the commercial department; B. H. Warren second vice-president, in charge of the manufacturing department, and P. F. Kobbe third vice-president, in charge of the financial department. The membership of the executive committee was increased to four, and Mr. G. W. Hebard, formerly vice-president, was made a member of the committee and empowered to act as vice-president in case of absence or inability to act of any of the vice-presidents.

—Munhall, Pa., has purchased a $600 hook and ladder outfit from the Gleason & Bailey Manufacturing Company.

—Williams & Co., New York, have sold the Yonkers board of health a pumping apparatus for the hospital.

—The St. Louis board of health has asked the municipal assembly to provide for public lavatories in various parts of the city. The system in use in London is recommended.

—The fire commissioners of Holyoke, Mass., have bought 1,500 feet of hose from the Revere Rubber Company at 60 cents a foot.

—The Phillips Insulated Wire Company, Pawtucket, R. I., is sending out a remarkably handsome and complete price list, as well as neatly prepared samples of its fire and weatherproof wire, underwriters' wire and Ideal wire, all of which it makes, in addition to its celebrated "O. K." weatherproof insulated wire. The company invites attention to the Ideal wire, with a black insulation and white fireproof outside finish. This latter wire is adapted for exposed work where a good white finish is desired.

—The Kent Electric Manufacturing Company, Worcester, Mass., has issued a neat catalogue illustrating and describing its alternating-current motors, battery motors and light power specialties.

—Among the numerous contracts which the Berlin Iron Bridge Company has secured of late for steel roofs covered with corrugated iron, lined with its patent anti-condensation roof lining, is the roof for the new power station for the Stamford Gas and Electric Company, at Stamford, Conn. The lay-out of this station is very convenient, and the construction is to be the very best. The engine and the dynamo room is 60 feet wide and 100 feet long, and the boiler-room adjoining is 40 feet wide and 75 feet long. The walls are of brick, and the framework of the roof as well as the supports for the travelling crane in the engine and dynamo room are of steel. The Berlin company has the contract for furnishing and erecting all of the structural steel work.

—The Globe Eleetric Heating Company, 141-147 North Twelfth street, Philadelphia, Pa., has just issued a pamphlet artistically illustrating and describing its various styles of electric heaters. These heaters possess some admirable features of design and construction, and are applicable to domestic work and for street-car purposes. Portable heaters also form a feature of the business.

—The Electric Engineering and Supply Company, Syracuse, N. Y., has in preparation a very complete catalogue of the articles manufactured by it. The list includes railway material, line material, hoods, a complete line of incandescent supplies, and a very extensive display and price lists of jack-knife switches. A special feature of the catalogue will be illustrations and prices of all switch parts and switchboard parts.

—The Louisville board of public works is urging the placing of fire hydrants in all parts of the city to do away with the use of fire cisterns.

—The present street-lighting contract of Louisville expires on June 1, 1897. There are 1,207 arc lights, 84 gas lights and 1,007 gasoline lights.

—Jacksonville, Fla., has appropriated $15,000 for a new garbage cremator.

—The Welsbach gas lamp is to be used in the illumination of Rittenhouse Square, Philadelphia.

—The National Foundry and Pipe Works, Limited, of Scottdale, Pa., secured a big water-pipe contract from the Baltimore water board recently. The quantity of water pipes for which bids were asked was a maximum of 26,000 tons, embracing pipes of from ten inches to forty-eight inches in diameter, and about 212,000 linear feet. The board decided to order but one-half the quantity, or 13,000 tons, at once, and arranged with rhe successful contractor that it shall have the right to take the full quantity of 26,000 tons at the contract price when needed iu the future. At the contract price the cost of the 13,000 tons will be $252,200, and for the full amount estimated double that sum. It is thought tnat not more than the 13,000 tons will be required during the year 1897.

—The metal slates manufactured by the Cartright Metal Roofing Co., of Philadelphia, were recently selected for covering the new city hall at Waterloo, Ind., having been adopted after a careful examination of all other kinds of roofing material on account of their superior merits.

—The Berlin Iron Bridge Company, of East Berlin, Conn., has just completed a new steel bridge for the Town of Greene, Me., and has in hand the construction of a steel bridge about 100 feet in length for the Cabot Mfg. Co., at Brunswick, Me. It has also recently received contracts for bridges at Auburn, Pembroke, Turner, Buckfield, and Bridgeton, Me.

—In one of the new buildings of the Ludlow Valve Manufacturing Company, of Troy, N. Y., the Berlin Iron Bridge Company, of East Berlin, Conn., are erecting a runway for a 20-ton electric travelling crane. The crane has a clear span of 55 feet and the length of runway is 160 feet. The track on which the crane runs is supported by heavy columns and girders of steel.

CITY GOVERNMENT is the title of a new publication that comes from New York which is devoted to the practical affairs of municipalities. It gives the experiences of various large cities in administering municipal affairs and will doubtless prove a great aid to the successful solving of many difficult problems of city government.—Houston (Tex.) Daily Post.

I have found CITY GOVERNMENT a very interesting and useful publication, furnishing a large amount of information upon various topics which are of great interest to city officials.—William S. Greene, Mayor, Fall River, Mass.

OFFICIALS OF THE CITY OF HOBOKEN.

1—James Curran, Postmaster. 2—H. A. La Pointe, Ass't-Postmaster. 3—Henry Eggert, Water Board. 4—Henry Quidore, Water Board. 5—Claus Shroeder, Water Board. 6—G. M. Sinclair, Plumbing Inspector. 7—Edward Meagher, Library Board. 8—Julius Schlatter, Library Board. 9—Thos. F. Hatfield, Librarian. 10—James J. Lawson, Library Board. 11—Otto Lehman, Library Board. 12—E. T. Stedman, Board of Health. 13—Antonio Granelli, Health Inspector. 14—L. S. Fugazzi, Board of Health. 15—August Grassman, Board of Health. 16—Palmer Campbell, Board of Health. 17—Dr. S. A. Helfer, Board of Health. 18—Jas. Havron, Clerk, Board of Health. 19—Coroner Volk. 20—Dr. Simon, Physician. 21—Lawrence Fagan, Mayor. 22—James F. Minturn, Attorney. 23—Francis M. McDonough, Recorder. 24—James Smith, Treasurer. 25—Robert V. Curry, Ass't Town Clerk. 26—Geo. Steihl, Councilman. 27—Ed. T. Offerman, Councilman. 28—Jos. S. Weinthal, Councilman. 29—Antony Capelli, Councilman. 30—Bernard Bayer, Street Commissioner. 31—James Marnell, Sergeant. 32—Louis Weinthal, Detective. 33—Owen Quinn, Detective. 34—Chas. A. Donovan, Chief of Police. 35—Julius Nelson, Detective. 36—Daniel Fenton, Detective. 37—Hy. Rathjen, Sergeant. 38—John Flattery, Sergeant. 39—Bernard Tietjen, Roundsman. 40—Patrick Hammond, Roundsman. 41—John E. Cross, Roundsman. 42—Ernest Ahnert, Prison Keeper.

A NORTH HUDSON GROUP.

Some day the three prosperous communities known as the city of Hoboken, the town of Union and Weehawken village will in all probability be grouped under one municipal government.

CITY GOVERNMENT OF HOBOKEN.

The city of Hoboken, N. J., occupies the proud position, according to the last census reports, of having stood at the head of all the cities of the world in increase of population during the preceding decade. It is one of the most prosperous suburbs of the city of New York, and as a port for transatlantic steamship lines vies with its great rival. At the head of the city government is the mayor and council.

Mayor Lawrence Fagan is now serving his second term in this important office. He has shown the highest kind of administrative ability since his election to the mayoralty.

With the mayor for executive the council naturally has the governing power of the city in its hands. Distinguished members of the city council are Ed T. Offerman, who is chairman of the body; George Steihl, also a valuable member of the board of education; Jos. S. Weinthal, a prosperous manufacturer; Henry Snyder, who is one of the oldest and most distinguished of Hoboken's politicians; Anthony Capelli, a live and ever-willing public officer; Henry Timken, a successful business man and courteous public official; James J. Fox, a man of sterling merit and business sagacity. These gentlemen also serve on the following committees: Laws and ordinances, fire and water, streets and assessments, sewers, licenses, printing and stationery, and alms. Their duties are especially important and remuneration very moderate.

Next in executive authority to the mayor is Chief of Police C. A. Donovan, who is one of the most highly respected officials of the city. His term of office has lasted for many years, and he has with him a highly competent staff, including captains, sergeants, roundsmen and detectives. Among these may be mentioned as especially valuable officials, Detective Julius Nelson, noted for his professional ability beyond the confines of Hoboken; Detectives Owen Quinn, Daniel Fenton and Louis Weinthal; Sergeants John Flattery, Hy. Rathjen and James Marnell, and Roundsmen John E. Cross, Patrick Hammond and Bernard Teitjen.

A most important executive office is also that held by City Clerk Martin V. Mcdermott, who is a clever official and has proved his popularity by a long retention of office. He is ably assisted by Robert V. Curry, a courteous and valuable official.

Other leading officials are City Treasurer James Smith, in whom the confidence of the city has been reposed for the conduct of its finances; Comptroller Frederick Kaufman, Collector of Revenue Bowes, Recorder Francis M. McDonough, famed for his terse, just and sometimes witty decisions; Judge of District Court E. D. Paxton, Street Commissioner Bernard Bayer, a conscientious administrator of his department; Henry Lohman, water registrar, and John R. Wiggins, president of the board of assessors of taxes.

The chief boards are those of education and health. The board of education is composed of some of the most intelligent members of the community. At its head is President Edward Russ, who devotes great attention to it, as he also does to the public library board, of which he is also president. With him is united in the executive work of the school department Charles V. Darcy, its able secretary, who is untiring in his zeal for the public school system of Hoboken, which is one of the best in the country.

The board of health is under very careful administration at the present time. Its president is Dr. E. T. Steadman, noted for his liberality to the poor whom he meets with in his extended practice. Palmer Campbell, who was the inceptor of the board of health, is one of Hoboken's most conspicuous figures. Besides being a director of the Hoboken Land and Improvement Company, the greatest real estate corporation in Hoboken, he is one of the officers of the First National Bank and has large interests in other business enterprises. S. A. Helfer, M. D., is another of its prominent members. He has one of the most lucrative practices in the city and is a prominent Mason. He long held the position of city physician and is examiner for

JAMES J. FOX.
37

J. HENRY TIMKIN.
40

prominent insurance companies. L. S. Fugazzi is another prominent member with large business interests in the city and acting as treasurer of the board. August Grassman has been mayor of the city and has held various public offices. James Havron is the clerk of the board, a bright and competent official. The health warden is Dr. W. J. Arlitz. G. M. Sinclair is the plumbing inspector, and Antonio Granelli, the inspector, long connected with the police department, performs the duties of his office with most satisfactory results.

The library board is a very important committee at the present time, owing to the duties of conducting the construction of Hoboken's new public library, which will be opened shortly. It is a splendid edifice and will be one of the most admirably arranged for the purpose of any in the country. The main cost of erecting it was defrayed by a grant from the state of New Jersey. This was obtained chiefly through the persistent efforts of Thomas F. Hatfield, secretary of the library board and librarian, one of the best-known and most popular officials of the

city, assisted by the board, consisting of Julius Schlatter, Otto Lehman, Edward Meagher, William J. O'Toole and James J. Lawson.

The water board consists of the following members: Henry Eggert, president; Claus Schroeder, C. Guaraglia, Henry Quidore and John R. Wiggins.

The corporation counsel's is an important city office, now occupied by James F. Minturn, whose honesty and cleverness have saved the city many troublesome lawsuits.

The postal department is in the hands of James Curran, assisted by F. A. Lapointe. It is administered with the utmost skill and carefulness by these officials.

THE TOWN OF UNION.

The Town of Union is one of the most flourishing municipalities in the immediate vicinity of the metropolis.

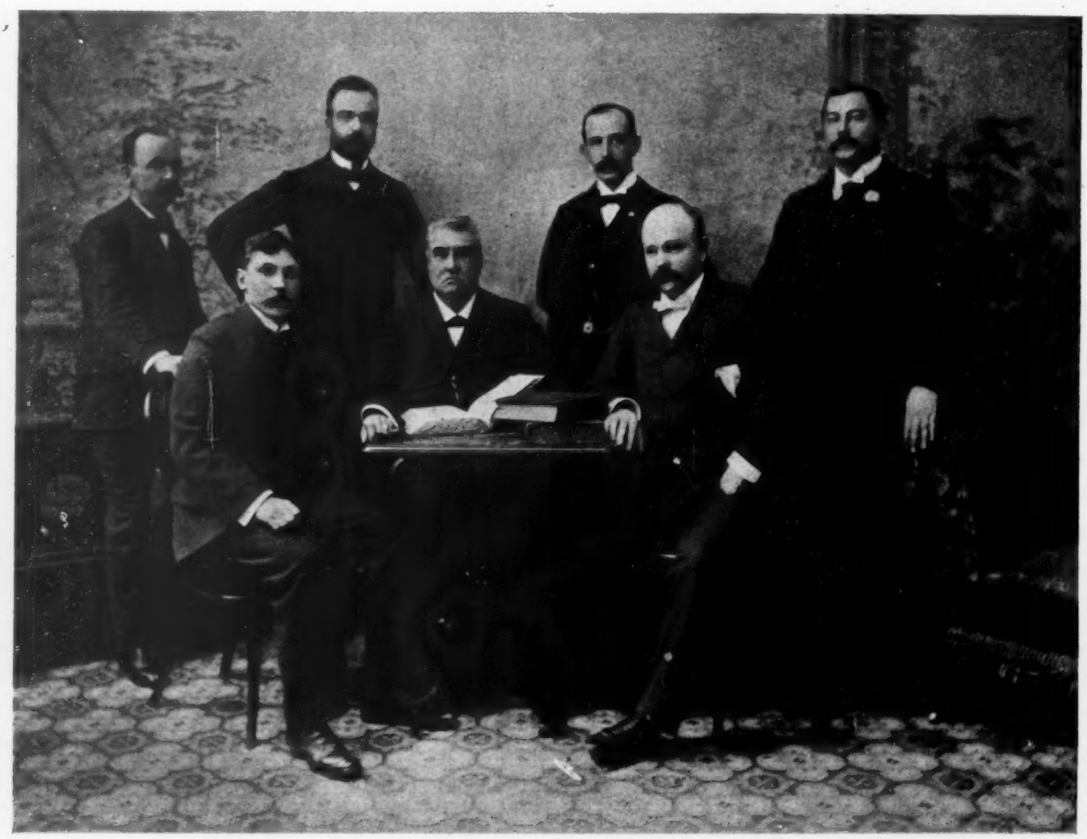
It has proved itself to be one of the most progressive and prosperous of the towns stretched along the banks of the North River. Its geographical position has furnished it with tremendous opportunities.

Its administration is on a singularly simple basis. The government consists of a board of councilmen comprised of six members, elected from the town at large, the chairman of the council acting as mayor. All heads of city departments are members of the board of council and chairman of the respective committees.

The town clerk is Chas. Singer, Jr., who was elected in the present year for the term of three years. Mr. Singer has been an active worker in local politics for many years and is popular with all who are connected with him in his official capacity.

The mayor, Jas. J. Casey, has held nearly every office within the gift of the people. He has been a member of the legislature, the board of freeholders, and a councilman many times before. He is one of the oldest residents in the town and has been an active spirit in moulding its future. The care and exactness with which he supervises almost every detail has gained for him the reputation of being one of the best executives the Town of Union ever had.

Councilman Higgins is serving his second term as supervisor of the street department. He has advanced the street cleaning system to its present perfection by applying many new methods. He is one of the large property owners in the town and as such gives the fullest attention to the expenditures, so that the affairs of his office are economically administered.



COUNCIL OF THE TOWN OF UNION.

Councilman Henry is recognized as one of the brightest members of the board. He is one of the leading business men of the town and his business instinct is reflected in every department over which he presides.

Councilman Bruce is the youngest member of the board, but by nature a close student of municipal affairs. Expert in the knowledge of taxation, he is recognized by his colleagues as an authority on assessment. He has advanced many ideas which have met with such ready approval by the other members of the board, that to him is

42 OFFICIALS OF THE TOWN OF UNION.

1—Otto Ortel, Sup't of Schools. 2—R. D. Earle, Engineer. 3—Robt. C. Dixon, Pres. Board of Education. 4—E. B. Young, Justice of the Peace. 5—Frederick Rippe, Freeholder. 6—Emil Groth, Freeholder. 7—Wm. Braunstein, Treasurer. 8—John J. Eagan, Collector of Taxes. 9—Wm. C. Heppenheimer, Attorney. 10—T. B. Stellwagen, Physician. 11—F. J. Stuke, Justice of the Peace.

credited the perfect system under which the taxes of the town are levied. Mr. Bruce is chief of the police.

Councilman Schlemm is also serving his second term. The only office he ever held before was that of town physician for a number of years. He is one of the self-made men of the town. He is largely interested in real estate and also a member of the board of directors of the People's Safe Deposit & Trust Co. As chairman of the committee on finance he superintends that department with an experienced eye, and in a way that reflects the fullest credit to that the most important department in the town, owing to the many large improvements the town has recently made.

Councilman Venino is serving his first term of office, and is chairman of the committee on law and buildings. The many details in the building department are assiduously cared for by Mr. Venino.

The collector of taxes, J. J. Eagan, is the youngest man ever elected for this important office. When considering that Mr. Eagan will handle more than six hundred thousand dollars during his career in office it readily illustrates that his attributes of efficiency and honesty have been recognized by the citizens of the town.

Recorder Shelton is serving his second term. He has served the town in no other capacity.

Mr. Braunstein has been treasurer of the town for eight years and never during that time has he had an opponent for the position. He is one of Union Hill's foremost citizens.

Assessor Sturm has held public office ever since the town was incorporated, as councilman, school commissioner, commissioner of appeals, and for ten years assessor.

Counsellor Heppenheimer has been the town attorney for the past two terms. General Heppenheimer was state comptroller, and a member of Gov. Abbet's staff. As a lawyer he is acknowledged one of New Jersey's best.

Dr. Stellwagen holds the offices of town physician and health inspector, being the leading physician of the town.

The two freeholders elected to represent the town of Union are Frederick Rippe and Emil Groth. Both are prosperous merchants of the town and have shown themselves to be devoted to its interests in every way.

Justice of the Peace Edw. B. Young is one of the town justices and is now holding an important position in connection with the building of the main lateral sewer. Justice Stuke is another prominent member of the judiciary.

The progressiveness of the town of Union is shown in the construction within a few years past of a splendid sewerage system. This work has been conducted under the care of Ralph D. Earle, the town engineer, and one of the brightest men in his profession in the country. Mr. Earle was for years the assistant manager for Charles D. Brush, whose reputation is national. The outlay incurred for the system amounted to several hundred thousand dollars, and the town bonds issued for the purpose sold at above par.

The board of education is practically in the hands of Robert C. Dixon, who acts as its presiding officer. He is a clever architect and looks closely after the educational interests of the town. A feature of the educational system is that manual training is incorporated in the usual public school curriculum. Otto Ortel acts as superintendent of schools and diligently fulfils the important duties of his office.

WEEHAWKEN.

43 SIMON KELLY.

The village of Weehawken forms the connecting link between Hoboken, the town of Union and the new Riverside Drive of the Hudson River. This is an addition to the Hudson County Boulevard, and, extending along the precipitous banks of the river for a mile, will afford the finest views of the city of New York obtainable. The government of Weekawken village centres in Mayor Simon Kelly, one of the most popular men in the North Hudson section. He is mayor, chief of police, and generally acts as president of the board of education. Mayor Kelly was selected to break the first earth in the Hudson County Boulevard and also in its extension, the Riverside Drive, with which R. D. Earle has also been prominently associated as surveyor and engineer.